OBSERVATIONS

ON THE

DISEASES

IN

LONG VOYAGES to HOT COUNTRIES,

AND PARTICULARLY

On thoſe which prevail in the EAST INDIES.

Publiſhed by Order of the COURT *of* DIRECTORS
of the Hon. EAST INDIA COMPANY.

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By JOHN CLARK, M.D.
Formerly Surgeon of the TALBOT Indiaman.

Publiſhed by Order of the COURT of DIRECTORS of
the Honourable EAST INDIA COMPANY.

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TO

Sir GEO. COLEBROOKE, Bart.

CHAIRMAN,

LAURENCE SULIVAN, Esq.

DEPUTY-CHAIRMAN,

AND

The rest of the DIRECTORS of the Hon. the United COMPANY of MERCHANTS trading to the EAST INDIES.

GENTLEMEN,

EVERY attempt to prevent or alleviate the diseases to which Europeans are subject in long voyages, and in the East Indies, where the Company possess such extensive territories, has met with your approbation and encouragement; I therefore hope you will think favourably of this performance,

 which

which has no other object in view than to obtain so important and desireable an end.

As the following observations were made in your service, I beg leave to offer them to the public under the sanction of your names. I am, with the greatest respect,

Gentlemen,

Your most obedient

and most humble servant,

London, March 3, 1773.

JOHN CLARK.

PREFACE.

THE following sheets contain an account of the most fatal diseases incident to Europeans in the East Indies. The observations were collected from a number of cases, and it was the amusement of a vacant hour at sea to put them into the order in which they now appear. Having been examined by Dr. Sylvester, by whom the medical concerns of the Company are conducted, he was of opinion that they might be in some degree beneficial to mankind. At his request, and with the approbation of the Directors, the author has been encouraged to offer them to the public.

The gentlemen who practise medicine in the service of the East India Company have

an opportunity of seeing a great number of sick, of observing the commencement, the progress, and various changes of diseases, and likewise of exhibiting the medicines, and knowing with certainty the effects which they produce. As many able practitioners have been engaged in the service, from the advantages which they enjoy, it might have been expected that the knowledge of the diseases in the East Indies would long ago have arrived at great perfection. It has, however, unfortunately happened, that few observations have been communicated, by immediate eye-witnesses.

In a Latin Thesis published at Edinburgh, a description is given of the putrid remittent fever, which happened at Bengal in the year 1762. Dr. Badenoch, formerly surgeon of the Nottingham Indiaman, in the fourth volume of the London Medical Essays, has also made some observations on the fevers*

* By Dr. James Lind, physician at Edinburgh.

 which

which usually occur in voyages to the East Indies, and is one of the few practitioners who has ventured to prescribe the bark freely.

Dr. Cleghorn, and Dr. Lind, physician to Haslar hospital, have great merit in being the first who introduced a rational system of practice in the fevers of hot climates. Although they do not recommend the Peruvian bark when fevers approach to the nature of continuals, and even seem doubtful of its safety in intermittents, unless in the remissions, yet they have greatly extended its use, at a time when theory had almost brought it into disrepute.

Since the days of the judicious Dr. Morton, the use of the bark has been greatly limited; but it must give every one a sensible pleasure, that, in opposition to every prejudice, the exhibition of this valuable medicine is becoming every day more general. Physicians now prescribe it more liberally in every species of remitting and intermitting

fevers.

fevers. Some do not even scruple to recommend it in all fevers which are not accompanied with inflammation. The success and propriety of this practice has been sufficiently proved by Dr. Millar, in his ingenious Observations on the prevailing Diseases of Great Britain.

The following work is divided into two parts. The first chapter contains an account of the weather and diseases which occurred in a voyage to Bengal. This was judged the more necessary, as so many ships from Europe annually sail to the East Indies, and the diseases to which Europeans are subject in voyages to that part of the world being invariably the same. In the second chapter is given an account of the air, unhealthy seasons, and the prevailing diseases in various parts of the East Indies. The third contains an exact meteorological register, kept during the course of a voyage to China, in the years 1771 and 1772.

In the second part, after having classed the diseases, practical observations are made on each of them. The fever and flux being the most fatal and frequent are treated at considerable length. Their symptoms are described, observations are made upon the remedies usually recommended, and that method of cure laid down which was found most successful. The other diseases are passed over in a more cursory manner, it being judged sufficient to mention their general treatment, and only to point out such particulars in practice as seemed necessary in hot climates.

In the Appendix, some alterations are proposed in the sea-provisions, regimen for the sick, and medicine-chest, on board the East India ships. How far they are practicable, or can be actually adopted, must be left to the determination of others. The author has been induced to offer them, as at present the greatest attention

is paid to the health of the Company's servants, and every proposal, which seems conducive to this important end, meets with the most candid reception.

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OBSERVATIONS
ON THE
DISEASES which most frequently occur in long Voyages to hot Countries, &c.

PART I.
General Obſervations on the Weather and Diſeaſes, in various Places, in the Eaſt Indies.

CHAP. I.
A general Account of the Weather and Diſeaſes in a Voyage from England to Bengal, in the Years 1768 *and* 1769.

THE Talbot Indiaman, ſir Charles Hudſon, bart. commander, ſailed from the Downs the 22d of March, 1768, and arrived at her moorings, in the river of Bengal, the 25th of Auguſt. There were embarked in all two hundred and

forty men, one hundred and eight belonged to the ſhip; the reſt were paſſengers and military recruits for India.

The month of March, till the 26th, was very cold and intemperate, with eaſterly winds; during the remainder of the month, the winds were weſterly, and the weather ſtill continued raw and uncomfortable, with fogs at night. Our paſſage down the Channel was favourable, and we ſoon arrived in more temperate latitudes, making the iſland of Madeira the 6th of April.

Rainy days, 1, 16, 25, 27, 28, 30,

Lat. day 23, 49 deg. 18 min. N. 30 day, 43 deg. 37 min. N.

The complaints of this month conſiſted of catarrhal fevers, with hard coughs and ſtitches in the ſides. Some had ſore throats; a few were afflicted with the rheumatiſm and other diſeaſes, the conſequences of catching cold. Theſe complaints were relieved by venæſection, antimonials in ſmall doſes, diluent pectorals, opiates, bliſters, and totally diſappeared with the warm

 weather.

weather. Two of the rheumatic caſes were very obſtinate; the ſymptoms continued for many months, although a variety of medicines were tried. At laſt, the pains, which became fixed to the joints, were removed by rubbing mercurial ointment upon the parts affected *.

April, from the beginning till the 17th, was warm, dry, and temperate; the north-eaſt trade † was favourable and ſteady.

* Vide Chapter on the Rheumatiſm.

† The perpetual winds betwixt the tropics which have got the name of trade-winds from their being ſo regular, and conſequently ſo uſeful in navigation, ſeem to have a conſiderable influence upon the health of ſeamen. The perflation occaſioned by theſe winds cools and refreſhes the air, which otherwiſe would be inſupportable. While they are ſteady, in every voyage, I have obſerved the ſeamen enjoy an uninterrupted ſtate of health; but as ſoon as they ceaſe, the air becomes hot and ſuffocating, and diſeaſes more or leſs prevail.

Betwixt the tropics, where the heat of the ſun is not only intenſe but conſtant, thoſe winds obſerve great regularity, and are eaſterly all the year round; but on each ſide of the line they vary a little, and are north-eaſt on the north ſide, and ſouth-eaſt on the ſouth.

steady. From this to the end of the month, light winds and frequent calms prevailed; the weather was excessive sultry; but the heat of the vertical sun was, in a good measure, obstructed by a clouded sky.

Rainy days, 21, · · thunder and lightning, 23, 27, · squally.

April 1, in lat. 40 deg. 36 min. N. 10 day, lat. 25 deg. 52 min. N. 20 day, lat. 5 deg. 49 min. N. 30 day, lat. 2 deg. 41 min. N.

From the beginning to the 10th of May, the heat of the weather rather increased, although the trade continued pretty brisk. From this till the 20th, pleasant breezes, with some intermediate days of calm; and as we daily increased our latitude, and had frequent showers, the air became very

The trade-winds generally extend to the 28th degree of latitude, on either side of the line, but as they come near the equator disappear, and variable winds and calms take place. What is said here is only to be understood of the open sea; for near the shores there are many circumstances which alter the regularity of these winds.

tem-

temperate. To the end of the month, fresh gales, cold, wet, and squally weather.

Rainy days, 5, 7, 9, 10, · 11, · · · 14, 17, · 18, · · · 20, 24, 25, · 26, · · 27, 29, · 30, · · ·

May 10, lat. 17 deg. 24 min. S. 20 day, lat. 29 deg. 26 min. S. 30 day, 34 deg. 31 min. S.

Towards the latter end of last month and beginning of this, many of the ship's crew were seized with remittent fevers. The disease was generally ushered in with slight rigors, bitter taste in the mouth, head-ach, pain above the eye-brows, nausea, vomiting, and sometimes a purging of gall succeeded; the pulse at first was very quick, but soft, the countenance flushed, the skin very hot, and the thirst intense. The fever generally remitted, and in the most continued form, exacerbations were evident at night. When the patient did not neglect his case, the disease was easily cured; however, three escaped with difficulty. The cure depended on cleansing the primæ viæ, by

ſmall doſes of tartar emetic, which indeed often removed the fever in a few hours or, when it came to remit, it readily yielded to the bark. The diſeaſe did not require bleeding; for in a few days it was accompanied with great proſtration of ſtrength and ſpirits. In ſuch caſes, the bark and wine were given freely, with the beſt effect, without paying regard to the remiſſions or exacerbations.

In June, we were in high latitudes, off the Cape of Good Hope, and found the weather cold and diſagreeable; the atmoſphere was hazy and moiſt. Towards the end of the month, the weather became more dry and temperate, with light breezes from the ſouthward.

Rainy days, 1, 2, 3, 4, 5, 6, 7, 8, 12, with thunder and hard ſqualls, 13, 17, 18, 19, 22, 23, 24, 25,

Lat. June 1, 34 deg. 35 min. S. 10 day, 35 deg. 33 min. S. 20 day, 32 deg. 9 min. S. 30 day, 23 deg. 19 min. S.

In the beginning of the month, the ſcurvy made its appearance; only ſix or eight were

were affected. The ſymptoms proceeded to no great length, except in two of the ſoldiers. As the diſeaſe advanced, their ham-ſtrings became affected; they were ſubject to profuſe hæmorrhages from the noſe and gums; and one of them frequently fainted upon the leaſt motion. They were plentifully ſupplied with wine, ſugar, &c. and had the uſual ſea medicines, with proper topicals; however, all proved very ineffectual to retard the diſeaſe, which daily encreaſed; all which the remedies could do, was barely to keep the patients alive till we arrived at Madagaſcar. Beſides this complaint, three of the ſoldiers laboured under a fever, attended with a low ſunk pulſe, of which one of them died.

Upon the firſt of July we anchored at St. Auguſtine's Bay, Madagaſcar. This large iſland extends from 12 to 26 degrees ſouth latitude, and abounds with all ſorts of refreſhments. The climate is healthy, the air dry. The appearance of the country about the bay is unpromiſing; nothing preſents itſelf to the eye but craggy pre-

cipices, and a ſwampy valley beſet with woods, and watered by a river which overflows each tide. A ſtranger, however, muſt not draw a picture of the iſland from this unfavourable confined ſpot; for, about a mile up the river, the ground is high and clear of woods. The country a little inland is extremely fertile, and affords a variety of agreeable landſcapes, for which they are entirely indebted to nature, the male inhabitants making no improvements in huſbandry, which is here the province of the females. But nature ſeems to produce every thing almoſt ſpontaneouſly. The vegetable productions are good, and in great abundance, ſuch as rice, India corn, ſugar-cane, ſweet potatoes, melons, pumkins, oranges, &c. In this iſland, there is a breed of very fine cattle; the mutton and fowls are good; and there is great variety and plenty of fiſh.

From April till November, the weather is dry, clear, calm, and ſultry; but the heat of the climate is tempered by ſea and land breezes, regularly ſucceeding one another; and ſuch is the happy ſitua-

tion

tion of th s island, that on one side it enjoys the perpetual trade-winds, and on the other the monsoon. During the above period, Europeans enjoy good health at the bay; and, at that time, it ought to be preferred to every other place of refreshment, after passing the delightful settlements of the Cape.

The rainy-season here commences about November, and seldom continues longer than March, during which time, the atmosphere is dark, gloomy, and boisterous, and much rain falls. From the accounts of ships that have touched here during this period, we are told, that the climate is very unhealthy, and fatal to Europeans. The situation of the bay makes it evident that this must be the case at that place; but as the villages of the natives, though at no great distance from the valley, are situated on high ground, they enjoy uninterrupted health all the year round; and, indeed, the hale vigorous constitution of the inhabitants, their long life, and total exemption from all chronic diseases, are suf-

sufficient evidences of the salubrity of the island.

All the ships which are obliged, through stress of weather or sickness, to put in here, during the rainy season, should have their sick tent erected two miles up the river, near the village of the natives, where the land is high; or the sick may be put daily ashore, at Tent Rock, opposite to the place where ships usually anchor, to take exercise, and have the benefit of the land air in the day-time, care being taken that they return to the ships before the evening dews happen, which, at this period, are very considerable. Thus the bad effects of nocturnal air, so productive of diseases, in many situations, in hot climates, will be prevented. However, no such precautions are necessary in the dry season.

We sailed from St. Augustine's Bay the 11th of July; till the 17th, the weather was calm, the air moist and suffocating; and from that till the end of the month, we had

had pleasant gales, hazy, and very sultry weather.

Rainy, 16, · 17, · · 18, · 25, 26, · 27.

Lat. day 1, 23 deg. 26 min. S. 20 day, 10 deg. 4 min. S. 25 day, 49 min. S. 30 day, 8 deg. 14 min. N.

Towards the end of the month, a putrid fever of a very bad kind made its appearance, attended with delirium, low pulse, petechiæ, livid vibices, and hæmorrhage from the nose, of which one died, and three or four more escaped with difficulty. It is proper to observe, that the symptoms of putrefaction only run high in those who had such an antipathy against the bark that they could not be prevailed upon to continue the use of it; whereas they who took this medicine, and continued to use it, very soon got free of the fever. As the patients, when taken ill, were removed from the rest, the infection did not become general.

August, from the beginning to the 25th, was sultry, hazy, and wet, with strong north-westerly winds. On the 25th, we anchored at Culpee, in the river of

of Bengal. From the 25th to the end of the month, the weather was very unsettled, with much thunder and lightning, accompanied with torrents of rain.

Rainy days, 8, 12, 13, · · thunder and lightning, 15, · · · thunder and lightning, 16, 19, 21, · · · thunder and lightning, 25, 26, 27, 28, 29, 30, 31, · · · · thunder and lightning.

Lat. Auguſt 10, 5 deg. 48 min. N. 19 day, 21 deg. 18 min. N.

In the two firſt weeks of Auguſt, many of our people, officers, paſſengers, as well as the common ſeamen, were attacked with nauſea, often a vomiting, but always a purging of gall, accompanied with fixed or flying pains in the bowels; for the firſt and ſecond days, the ſtools were large and bilious; but in all it terminated in gripes and fruitleſs ſtraining. In two or three, the diſeaſe made its appearance with all the ſymptoms of a bilious colic; and in one it began as a colera. All theſe bilious complaints, whether we give them the names of diarrhea, colera, or dry belly-ach, when neglected, had an equal ten-

dency

dency to terminate in the dysentery; but when proper remedies were applied at first, the diseases were easily removed. The particular treatment I shall refer to another place, only I must remark, that there is a very great analogy amongst all these diseases; and that those who suffered most by these complaints were more liable to putrid remittent fevers and dysenteries in the following months.

I shall now proceed to give a general account of the weather and the diseases that occurred during the months we staid at Bengal, leaving the description of the country, as far as it seemed to influence these diseases, to another place.

The first two weeks of September were intolerably hot, sultry, and suffocating, with fogs and dews at nights. On the 16th and 17th, it blew fresh from the east. During the remainder of the month, the weather continued as intemperately hot as ever, with few or no intermediate breezes.

Rainy days, 4, 6, · · 8, 9, 21, 22, · · with thunder, lightning, and hard squalls.

Neither

Neither was the month of October more temperate; nay, the weather, if any thing, was more insupportably sultry, and scarcely a single breath of air was observable till the 28th, when refreshing breezes rendered the weather more cool and temperate for the remainder of the month.

Rainy days, 2, 6, 7, 8, 10, ...

During these unhealthy months, fevers and fluxes of a very putrid nature, were very fatal at Culpee, and carried off numbers of seamen belonging to the ships lying there. At last they became so universal, that, by the end of September, there were few or no hands on board of our ship capable of doing duty. They likewise raged at Calcutta, and were particularly fatal to those who had lately arrived.

The first weeks of November were calm and sultry in the middle of the day; but the air was refreshed by pleasant breezes, frequently in the forenoon, and always in the afternoon. From the 16th to the end of the month, the weather was serene, pleasant, and temperate.

No rain; wind northerly.

In the beginning of December, the weather was agreeable, and the winds westerly. On the 9th, the wind shifted to the south. From this till the 14th, it was remarkably close and calm in the day-time, and there were thick fogs and heavy dews at nights. The rest of the month, the winds were northerly and the weather delightful, as it usually is here at this season of the year.

No rain.

About the 10th of the month, several of the seamen were afflicted with diarrheas, which I shall call colliquative, as they were accompanied with very copious thin stools, without pain, gripes, or tenesmus. In twenty-four hours, they reduced the patient to the greatest degree of weakness, and soon made the countenance look pale and ghastly. The principal remedies employed were very gentle emetics; magnesia and rhubarb, with opium, to restrain the profuse discharge, and chicken broth and wine, to support the strength of the patient; and, in many cases, the bark, at first

first in light infusions, and afterwards in substance, was indispensably necessary to strengthen the relaxed viscera.

January, 1769, was a pleasant, healthy, and temperate month. Our people suffered no inconvenience from the climate Two or three were in the convalescent state of the flux, one laboured under the hepatitis, and two had other abdominal obstructions, the consequence of frequent attacks of the diseases of the former months.

Rainy day, 1, winds for the most part northerly.

February was also serene, dry, and temperate, with agreeable breezes, except in the middle of the day, when the air was calm and sultry for a few hours; but, at this time, as also in the two preceding months, the climate is so healthy, that exposition to the sun and exercise, which before seldom failed to produce instant sickness, were attended with no danger, as the sky was generally clouded, the marshy grounds dry, and the air free from noxious exhalations.

Rainy

Rainy days, 5, 25, 26, · · · with much thunder and lightning, and ſtrong north-weſterly winds.

The beginning of March was alſo temperate. About the 11th, the weather became cloſe and ſultry, and continued ſo till the 22d, unleſs when hard ſqualls happened, which were accompanied with thunder, lightning, and deluges of rain. As we were at ſea during the remainder of the month, the weather, though warm, was very agreeable.

Rainy days, 11, · · · · thunder and lightning; 12, · · 14, 19, · · · with much thunder and lightning.

We ſailed for England the 22d of March. At this time almoſt all our people were able to do duty; however, ſeveral of them, who had ſuffered much in the ſickly ſeaſon, had not regained their uſual ſtrength and vigour. After the delightful months already deſcribed, this may, at firſt ſight, ſeem extraordinary; but when it is conſidered on what poor diet ſeamen are obliged to live at this place, their ſlow recovery from diſeaſes

will be easily accounted for. The animal food consists of lean beef, affording little nourishment; and pork, which makes a considerable part of their diet, is very bad; greens and other fresh vegetables are neither to be procured in such plenty, nor at such a moderate rate, as to become an article of the ship's provision; the only vegetables which they have in abundance are yams and rice.

During the two last months we remained at Bengal, about twenty of our people had the venereal disease, which they contracted at Culpee. The infection, for the most part, made its appearance in the form of ulcers; warts and rasberry-like excrescences on the penis; amongst this number, only two had a virulent gonorrhœa. The disease, though topical, was only to be cured by mercury; however, several cases resisted its power, as a very inconsiderable quantity of the specific, whether exhibited internally, or applied externally, run to the mouth, and was speedily carried off by salivation; so great was the relaxation occasioned by the heat of

of the climate, and ſo poor and diſſolved was the craſis of the blood, long after the deſtructive diſeaſes of the ſickly ſeaſon *.

The firſt week of April was calm and ſultry. From that to the 23d, there were light winds, with frequent calms, and very hot weather. The remainder of the month was more temperate, with refreſhing breezes.

Rainy day, 29.

Lat. April 1, 13 deg. 41 min. N. 10 day, 11 deg. N. 20 day, 7 deg. 47 min. N. 30 day, 5 deg. 44 min. N.

In April, five of our people had remitting fevers. In one of the patients the diſeaſe was accompanied with ſymptoms of putrefaction, great proſtration of ſtrength, hæmorrhage from the noſe, and a delirium, with a low ſunk pulſe. Although bark and wine were given freely, yet his fever continued for about three weeks.

The month of May, though very warm and ſultry, was healthy. In the firſt week,

* Vide Chapter on the Venereal Diſeaſe.

 being

being under the equator, we were becalmed, but the heat of the sun was obstructed by a clouded sky, and the air refreshed by agreeable showers. During the rest of the month, as the trade-wind became steady, and we daily increased our distance from the sun, the weather was more temperate.

Rainy days, 1, ' · 2, 3, 4, 5, 6, · with lightning; 11, 12, 14, 18, 19, 22, · · 27, 29, 31, ·

May 28, 11 deg. 32 min. S. 30 day, 22 deg. 5 min. S.

June, from the beginning to the 7th, was temperate and cool, and the winds favourable. From this to the end of the month, for the most part, it blew fresh from the north-west, and the weather was cold, wet, and stormy.

Lat. June 18, 30 deg. 20 min. S. 20 day, 32 deg. 4 min. S.

Rainy days, 1, 2, 7, 8, 9, · · · 10, 11, 13, 15, 17, 20, 22, 27, · · with much lightning.

July was very cold and stormy. From the beginning to the 5th, it blew hard,

with

with frequent squalls. From this till the 20th, the weather was very uncomfortable and stormy, one violent hard gale continually succeeding another. The high seas and contrary winds obliged us, for the most part, to lie to; and, as the ship became leaky, both from the water getting in betwixt her planks, and from the waves and large seas breaking over the decks, it was necessary to keep the pumps almost constantly at work. From the 20th to the end of the month, the weather was variable and unsettled.

Rainy days, 3, 4, 5, · · hail, 9, 10, · · · thunder and lightning; 12, · · · · some hail, thunder and lightning; 13, 14, 15, thunder and lightning; r8, continual rain, hail, thunder and lightning; 19, · · · · thunder and lightning; 20, 21, 22, 24, 26, 27, ·

Lat. July 1, 35 deg. 45 min. S. 6 day, 36 deg. 36 min. S. 10 day, 37 deg. 24 min. S. 20 day, 34 deg. 51 min. S. 30 day, 23 deg. 55 min. S.

In the beginning of June, two of our people began to be affected with the scur-

vy; the continuance of the cold moist weather, the nastiness of the decks, the corruption of their common diet, the biscuit as well as salted provisions, all contributed to make its progress very rapid. On the 18th of July, twenty of the seamen were rendered incapable of all duty, and some of them reduced to the last dreadful stage of this distemper; and many of those who still kept the deck, were more or less affected with it. Altho' the officers, who lived well, and lay in drier apartments, were not totally exempted from the disease; yet the symptoms ran to no great height in any of them, except in one who was greatly weakened by an antecedent fever.

The unfavourable weather still continuing, on the 19th of July, it was unanimously agreed to bear away for Madagascar, as being the nearest and best port for refreshment, and the only means of preserving the lives of our seamen, and of course the ship and cargo, which now seemed to be in imminent danger. We arrived there on the 1st of August, and

anchored in St. Auguſtine Bay. During our run to that place, the diſeaſe increaſed daily, the ſymptoms grew worſe, and greater numbers were affected. Out of the ſhip's company, which, at our leaving Bengal, conſiſted of no more than eighty-ſeven, officers and boys included, thirty-three of the beſt hands were confined below, many of them in the laſt ſtage of the diſeaſe; and thoſe who ſtill continued upon deck were ſo much enfeebled, that the duty of the ſhip required the aſſiſtance of the paſſengers and their ſervants.

We lay at Madagaſcar all the month of Auguſt, during which time the weather was ſettled, the air dry, and the heat of the ſun pretty intenſe in the day-time; but at nights it was chilly and cold, owing to freſh ſea-breezes blowing from the afternoon till midnight.

As ſoon as we arrived at this plentiful iſland, the ſick were ſupplied with oranges in abundance, and vegetable ſoups, thickened with greens and pumkins. It was, however, judged prudent, that the weakeſt of them ſhould be kept

on board for a few days before they were sent to the sick tent. By this means, and by the free use of wine allowed by our commander through the course of the disease, we had the good fortune to lose none of our people. By the 20th of the month, they were all capable of duty except four, three of whom had still monstrous swelled legs and contracted ham-strings; the countenance of the other patient was bloated and he was subject to profuse hæmorrhages from the nose.

On the 7th of September, we sailed from St. Augustine's Bay. As we approached the high latitudes of the Cape of Good Hope, the weather was again cold, wet, and uncomfortable.

Rainy days, 5, · · · 15, 16, 17, 21, 22, 23, · · 25, 28, 30, · with lightning.

Lat. September 18, 24 deg. S. 20 day, 33 deg. 56 min. S. 30 day, 35 deg. 36 min. S.

The first week of October was cool, dry, and temperate. From this to the end of the month, the weather was warm and

and ſerene, the heat of the ſun being tempered by refreſhing breezes.

Rainy day, 1.

Lat. October 10, 24 deg. 4 min. S. 30 day, 14 deg. 31 min. S.

On the 17th of this month, we anchored at the iſland of St. Helena, and ſet out to ſea again on the 29th.

This iſland is ſituated in the middle of an immenſe ocean, and in a tract where the ſouth-eaſt trade ſeldom intermits; the climate is therefore ſerene, temperate and pleaſant; and through the whole year, is neither ſubject to the extremes of heat nor cold. This ſtupendous rock appears very barren at firſt ſight; but, upon entering into the country, the eye is tranſported with ſcenes and landſcapes romantic beyond deſcription, conſiſting of good paſtures, verdant vales, and high irregular precipices. The ſoil in the valleys is rich and deep, and would produce every kind of grain, roots, and greens, if it was not for an amazing number of rats and mice, which devour the ſeed as ſoon as thrown into the ground.

A ſpe-

A ſpecies of yam grows here in great plenty, which is ſliced and boiled for a long time, and afterwards toaſted: before it is thus prepared, the juice of this root is of a poiſonous nature; but, after it is dreſſed, not only the ſlaves, but even the beſt families, eat it as bread, to which they prefer it, although they have flour and corn ſent annually from England in the ſtoreſhips.

The families generally reſide in the country; but as ſoon as a ſhip arrives, they repair to St. James's valley, where moſt of them take in lodgers, who meet with excellent refreſhments, and are regaled with abundance of animal and vegetable food, and ſome fruits, the produce of their farms. If one might judge from the variety of roots, ſuch as carrots, turnips, potatoes, and greens, which are ſerved up daily at their entertainments, he would naturally conclude, that, with a little pains, a ſufficient quantity of this ſalutary part of diet might be raiſed, not only to ſupply the ſoldiers who reſide here, but even a whole ſcorbutic fleet.

Al-

Although the gentlemen, who can afford to live on ſhore meet with ſuch proper refreſhments, after a long ſea-voyage, yet this, is not the caſe of the common ſailors; for, unleſs half rotten with the ſcurvy, and ſent aſhore upon ſick quarters, no other vegetable can be procured for them, but at an exorbitant charge, except purſlin, which is gathered by the boys from the rocks, and of which they have a ſcanty allowance in their ſoup. The want of proper refreſhments at this iſland may be conſidered as the only cauſe why ſeamen are ſo often afflicted with the ſcurvy in the ſhort paſſage to England; nor can any other reaſon be aſſigned why the ſoldiers who reſide on this ſalutary iſland, are ſubject to the ſame diſeaſe.

This ſcarcity of vegetables, in my opinion, might eaſily be remedied, by ſetting apart a ſufficient quantity of the company's land, for the cultivation of greens and roots; for certainly, with the ſame care and induſtry, theſe lands would produce as good pot-herbs, turnips, carrots, potatoes,

potatoes, and pumkins as any of the farms of the planters, who are only studious to raise a sufficient quantity for themselves and guests. If such a humane scheme as this was adopted, St. Helena would be inferior to no place in the world for refreshments. Vegetables would be produced in abundance, not only to supply the garrison, but would be procured at a rate sufficiently moderate to become an article of every ship's allowance while at this island.

During the first week of November, the weather was pleasant, and the south-east trade steady. From the 18th till the 20th, being near the equator, the weather was sultry and rainy, and the winds variable, with frequent calms. Till the end of the month, there was a fresh north-east trade, with agreeable temperate weather.

Rainy days, 12, 13, 15, 16, 17, 18, 19, 20, 29, . . .

Lat. day 1, 11 deg. 50 min. S. 10 day, 2 deg. 25 min. N. 20 day, 8 deg. 46 min. N. 30 day, 21 deg. 27 min. N.

The

This month ſeveral of our people were attacked with fevers, which only ſeemed to be ſymptomatic from bile, as the diſeaſe ſoon diſappeared by cleanſing the primæ viæ. In two caſes, however, the diſeaſe was accompanied with ſymptoms of putrefaction, and the fever run out to the 12th or 13th day.

During the firſt ten days of December, the weather was delightful and temperate, and continued ſo till near the 20th, with ſome intermediate days of calm.—From this to the end of the month, it was cloudy, hazy, and cold.

Towards the end of the month, three of our people were confined below by the ſcurvy, attended with the uſual ſymptoms, and many ſeemed to have a tendency to relapſe.

Rainy, 2, 8, 11, 14, 17, 18, 19, 21, 22, 23, 27, 29,

Lat. day 10, 26 deg. 46 min. N. 20 day, 36 deg. 31 min. N. 31 day, 49 deg. N.

January, 1770, was a cold diſagreeable month, the winds were north-eaſterly, ac-

accompanied with ſnow and ſleet. On the 21ſt, the wind ſhifted to the weſtward, and the weather became more temperate.

On the 5th, at night, we made Scilly, but, by contrary winds, were detained in the Channel. On the 16th, we arrived in the Downs, which put an end to our tedious and diſagreeable voyage.

The diſeaſes of our ſeamen this month were coughs and colds; four had ulcerated ſore throats; ſome were afflicted with the rheumatiſm; and two had ſwelled teſticles, independent of any venereal taint.

The treatment of theſe caſes did not differ from the common practice, only it is to be remarked, that it was unneceſſary to make copious evacuations; and even when blood was drawn for a peripneumonic ſymptom, a few ounces, though it gave relief, greatly enfeebled the patient.

CHAP. II.

A general Account of the Country, Air, and prevailing Diseases, in different Parts of the East Indies.

HAVING, in the first chapter, made some observations upon the weather and the diseases, which most frequently occur in voyages to the East Indies, I shall now proceed to give a general account of the situations, changes of the weather and other circumstances which produce land diseases.

I shall begin with taking a cursory survey of the coasts of Malabar and Coromandel; then passing to Bengal, I shall proceed to the eastern coast, from Aracan to the streights of Malacca, and islands adjacent; and lastly end with the port of Canton, which is now the only part of the Chinese empire frequented by Europeans.

SECT.

SECT I.

The Coasts of Malabar and Coromandel.

CAPE Comorin lies in about 7 deg. 56 min. N. Near the shore, the land is low and covered with trees; but at a little distance from the sea a chain of high mountains take their rise, and extending northward, divide the coast of Malabar from that of Coromandel. These are usually called the Gatta or Balagate mountains. The difference of the seasons, which are exactly opposite on the two coasts, depends entirely on the intervention of these high mountains, the coast of Malabar enjoying dry serene weather, while the opposite coast is drenched in rain.

The first settlement on the Malabar coast of any note, belonging to the English, is Anjanga. Near the shore, the land is low and woody, and the water bad.

Cocheen, belonging to the Dutch, stands low, and is situated on the banks of

of a river. In the wet ſeaſon, as torrents of rain deſcend from the mountains, all the water is thick and muddy. It is ſuppoſed that the monſtrous ſwelled legs, to which the natives are ſubject, ſo well known over all India by the name of Cocheen legs, are occaſioned by the impurities of theſe waters, However this may be, from the longeſt reſidence, no European becomes liable to the ſame diſeaſe. It cannot, indeed, be properly termed a diſeaſe; for the natives of Cocheen are extremely healthy, neither is the bulk of their legs the leaſt inconvenience to them. No præternatural weight is to be obſerved; they are ſtrong-bodied, and enjoy as much agility, as if they were totally exempt from this unſeemly deformity.

From Cocheen to Calicut, where the Engliſh have a factory, the coaſt is beautifully diverſified with riſing hills and mountains. Tillicherry, a town and fort, belonging to the Engliſh, lying in 11 deg. 50 min. north latitude, is finely ſituated, abounds with refreſhments, and is ex-

tremely healthy. The island and city of Goa, the capital of the Portuguese, is likewise tolerably healthy.

The island of Bombay, lying in 19 deg. north latitude, of itself is barren; and the Gentoos on the continent, believing in the metempsychosis, from a principle of religion, allow none of their cattle to be slaughtered; however, they are abundantly supplied with provisions from Surat. This small island is very populous; the natives from the continent flock under the English government, where their liberties are more secure. The town and fort, which are situated on the south-east of the island, stand dry, and, from the improvements which have already been made, it may be esteemed amongst the number of our healthiest settlements. The last place I shall mention is Surat; the city, which is situated about fifteen or sixteen miles up the country, is large, spacious, and pretty healthful.

The whole coast is temperate and healthy, when compared with many of our settlements in India. It enjoys cool re-

refreshing land and sea breezes upwards of six months in the year, which generally begin in October and continue till the end of March; but as soon as the south-west monsoon sets in, which happens in April, these breezes become uncertain, and, for the most part, disappear. The dry season, on this coast, is from October to April, and the rainy season in the opposite months.

In the wet season, Europeans are subject to fevers and fluxes: the last is the most frequent distemper, which, however, is never so fatal as at Bengal, Batavia, and other unhealthy places in the East Indies. The colera is also a very frequent disease at Bombay; and on this coast the barbiers is more common than in any other part of India. This disease is a species of palsy, affecting the limbs, and frequently the organs of speech, with inability of motion. This disease is brought on by expositions to the cold land winds in January and February. It is very obstinate, and seldom removed till a return of the warm weather; but the few

Europeans, whom I saw ill of it, were easily cured by a change of climate and sea voyage, without having recourse to any medicine.

We shall now proceed to the eastern coast of this peninsula, usually called Coromandel.

The southern part of this coast is little frequented till we arrive at the pleasant Dutch settlement at Negapatnam, lying in 11 deg. 10 min. north latitude, and abounding with refreshments of all sorts. A little farther up is the Danish settlement of Trincobar.

The first settlement which the English had was Fort St. David's, now in ruins; but they reside at Cudalore, a pleasant village, lying about three miles to the southward of the fort.

Madrass is our only presidentship on this coast. The fort is strong, the houses of the residents well built and airy. A pleasant village, called the Black Town, lies to the northward about a mile, and is promiscuously inhabited by the English, Gentoo merchants, and Banians. This village

village is populous and healthy; all the country around is dry, flat, and pleasant, till we arrive near St. Thomas's Mount, eight miles from Madrass, where the residents are continually making parties of pleasure, which greatly contributes to their health, the air here being particularly pure and salutary.

The French, English, and Dutch have factories at Massulapatam; but the pleasant and healthy settlement of Visacapatam belongs entirely to the English.

The soil on this coast, near the shores, is dry and sandy; but more inland, the country is diversified with hills and verdant pastures; and I have been informed by a gentleman in India, who had travelled all over the Carnatic, that the whole tract of country is, in general, remarkably pleasant and fertile; and that, even in the warmest months, the air is so salutary, that an exposition to the sun, fowling, and athletic exercises are attended with no inconveniency to health; however, at Madrass, the excessive heat renders such amusements impracticable in the heat of the day.

On this coast, the temperature of the air is various at different seasons of the year. In January, February, and March, the weather is very temperate, and generally fair; but in May, June, and July, becomes insupportably sultry, owing to the land winds passing over long tracts of sand. These winds often blow with such violence that the air is obscured with dust; however, these hurricanes are of short duration, and always disappear with the rains in October.

The land winds generally blow from midnight till noon, and are succeeded by refreshing sea breezes, which continue till nine or ten at night, and frequently the whole night. By this means, the effects of a hot air are prevented, which, if constant for any length of time, would produce baneful complaints; besides, these hot suffocating land winds are not always constant, but the refreshing sea breezes seldom fail to return regularly during the hot months.

The north-east monsoon, which, on this coast, ushers in the wet season, begins

in October and continues till March, but the rains seldom last longer than December. As there is no evaporations in consequence of the rains, which are absorbed almost as soon as they fall; the country being dry, and there being no marshes of any extent, the wet season is the most healthy period in the year.

From this account it will appear, that this coast must be particularly salutary; and, indeed, the residents enjoy good health. The only diseases to which they seem to be particularly subject are great secretions of bile, accompanied with nausea, sickness at stomach, and sometimes a purging. The people at Madrass are so well acquainted with this complaint, that they are generally their own physicians; and, in the warm months, it is no uncommon thing to see a patient one hour vomiting abundance of gall, and the next hour taking a ride into the country. This disease is in general so mild with them, that it seldom requires any other cure than the exhibition of a gentle puke.

However, the same diseases are attended with more violent symptoms amongst those who are not accustomed to the climate. In the year 1771, in the end of July and beginning of August, these bilious disorders raged more universally than usual amongst the seamen who came off long voyages, and began with the following symptoms. The disease was ushered in with sickness at stomach, vomiting, and purging of gall; in some, the stools were large and copious, without gripes; others were tormented with excruciating pains in the bowels, continual inclination to stool, with fruitless straining; others were seized with all the symptoms of dry belly-ach, vomiting, stricture about the navel, and great constipation; and, in some, the disease was attended with colera.

On the second day after these diseases made their appearance, ten of our people were affected; and in a fortnight, they went through above one third of the ship's company, and raged as universally amongst the other ships lying at Madrass, as

as alſo amongſt the new comers who lived on ſhore.

Amongſt Europeans who undergo much fatigue, and particularly amongſt the military, the hepatitis, ſwellings and obſtructions of the liver, are very frequent diſeaſes, and a number of the ſoldiers are annually carried off by fevers and fluxes. Although the coaſt of Coromandel is by far the moſt healthy of all our ſettlements in India, yet the diſeaſes which occur there, do not differ from thoſe of the more unhealthy ſituations, but by their being milder in their nature, and ſeldom epidemic.

We may likewiſe obſerve, even on this healthful coaſt, that the fair ſex, enjoying, indeed, a remarkable immunity from the endemic and popular diſeaſes of a warm climate, are, however, ſubject to many inconveniencies after a very ſhort reſidence; the lively bloom and ruddy complexions they bring from Europe are ſoon converted into a languid paleneſs; they become ſupine and enervated, and ſuffer many circumſtances of ill health

pecu-

peculiar to the ſex, from mere heat of climate and relaxation of ſyſtem; however, parturition is not attended with ſuch great danger here as at Bengal, neither is the puerperal fever of ſuch a putrid nature.

The ſouthern parts of India are ſubject to very great heats, which would be inſupportable, if it was not for the periodical returns of wind and rain. As the variations of the ſeaſons, in this part of the world, depend upon the monſoons, a term we have ſuch frequent occaſion to uſe, before we proceed any farther, it may be proper to give an explanation of it.

On the ſouthern coaſts of Aſia, from Arabia to China, the winds are periodical, blowing in one direction one half of the year, and in the direct oppoſite during the other; theſe winds, by ſailors, are called monſoons; and the regularity of their direction ſeems to depend on the annual motion of the ſun. When the ſun's declination is north, betwixt March and September, the monſoons, or periodical

riodical winds, are westerly; and, as soon as his declination is south, betwixt September and March, the monsoon shifts, and blows easterly during these six months. On the coasts, as well as over all the Arabian, Indian, and Chinese seas, the periodical winds are invariably regular, the south-west monsoon blowing from April to March, and the south-east monsoon in the opposite months; but inland, on the continent, great variations take place, owing to the soil and other dispositions, which alter the course of these winds*.

The south-west monsoon brings the rainy season with it in every part of India, except on the coast of Coromandel, owing to the opposition of the high mountains of the Balagate. On this coast, the wet weather happens in the north-east monsoon, which every where else blows clear and fair.

* For a more particular account, vide Philosoph. Transact.

At

At the time of the ſhifting of the monſoons, a great change in the weather takes place; the ſky generally becomes dark, cloudy, and boiſterous, and torrents of rain deſcend, accompanied with thunder and lightning. At Bengal, and in China, the violence of theſe ſtorms is ſuch as to render all navigation extremely dangerous on theſe coaſts. On ſhore, trees are torn up by the roots, and great damage done to houſes.—Such tremendous ſtorms as theſe happen frequently in warm climates, about the equinoxes; in the Weſt Indies, they are called hurricanes; in the Eaſt Indies, the breaking up of the monſoons; and in the Chineſe ſeas, perhaps from their greater violence, they are diſtinguiſhed by the name of a typhoon.

SECT. II.

Bengal, the eastern Coast as far as Malacca, and Islands adjacent.

THE extensive kingdom of Bengal passes through several latitudes; in many places the soil is rich, the air serene and temperate, and the country delightful; but in the province lying on the mouths of the Ganges, the soil is marshy, the country flat, and covered with wood. Owing to these circumstances, the natives, and still more the Europeans, enjoy various degrees of health.

Calcutta, the chief settlement and capital of the English, is populous and extensive, and is situated above a hundred miles up the river of Bengal. The houses of the residents are spacious and beautiful, and made as cool as art can invent, the apartments being large and lofty, and almost every house having a portico of the extent of the front, supported on columns. In some of the best houses, this gallery is continued quite round the building,

building, and is always of the same height. Such a construction is not only highly ornamental, exhibiting the appearance of splendid palaces, but is very salutary, on account of the free admission of air. Betwixt the columns of the portico, canvas hangings are fixed, which may be occasionally moistened with water; by this means, at any time, the suffocating air may be rendered, in some measure, cool. The rest of the city is inhabited by Portuguese, Armenians, Banians, and black merchants; but the most considerable part of the natives live in streets or squares, (usually called compounds) their habitations only consisting of small huts, closely situated, and only defended from the inclemency of the weather by mats.

The new fort is about a mile down the river, and stands on flat marshy ground. The barracks are roomy cool and elegant, and the whole is surrounded by strong fortifications. The land about this place is cleared for many miles; but, from its low situation, is very damp and wet in the rainy season. About three miles south

from

from Calcutta, there is a large collection of water, uſually called the Salt-water Lake, which has a communication with the ſea. This lake extends many miles up the country, and joining with other branches of the Ganges, it overflows in the rainy ſeaſon. The ſides of this large pool of water are very ſwampy, and in many places it forms fens, overgrown with ſedges and reeds. As ſoon as the rains are over, the lake ſubſides, and leaves on the ground abundance of mud, ſlime, prawns, and other fiſh, which ſoon putrify with the heat of the ſeaſon, and occaſion very noxious exhalations. The land to the northward does not afford a more favourable proſpect, being low, ſwampy, and fit only for the cultivation of rice. The whole country, as far as our view can extend, appears flat, and no hills nor mountains are to be ſeen.

From Calcutta to Culpee, the moſt uſual ſtation of our ſhips, the beach is muddy, the tides run high, and on each ſide of the river, the land is uncultivated, and ſo much overgrown with trees, ſhrubs,

shrubs, and long grass, that it is one continued thicket, affording convenient haunts for tygers and other wild animals. Several creeks here and there run off from the river; and some country villages, the residence of the natives, are situated upon its banks, the most desireable and healthful of which is Fulter, where the Dutch ships are stationed.

The village of Culpee is situated about a mile up a creek, in low marshy ground. The beach here, as well as the creek, is very muddy and slimy at low water; the land on each side is uncultivated and wet, and overgrown with impenetrable shrubs and long grass; the whole country around, for a considerable extent, has the same unfavourable aspect, and in the rainy season is converted into a pool of stagnant water. In short, there is not in the whole world a more unhealthy situation than Culpee.

The remaining station for ships that trade to Bengal, are Cogeree and Ingelee. The first of these is a village situated on a wide extended plain, tolerably dry, and free

free from underwood, and may be reckoned healthy when compared with the unfavourable place we have just now described. In the year 1768, although the Dutch ships which lay at this village were not totally exempted from the general sickness of the season, yet diseases were attended with no great mortality amongst their seamen.——Ingelee is tolerably situated, the ships lie more out at sea; and the sickly season being over before they drop down here to take in the remainder of the cargo for Europe, the seamen of all nations enjoy good health; and those who have been weakened by preceding sickness recover sooner than at any of the places we have mentioned.

The rainy season at Bengal begins in June, and continues till October. During that time, scarcely a single day passes without deluges of rain, accompanied with thunder and lightning. In August and September, the air is moist, intolerably sultry, and stifling, with seldom an intervening breeze; for there is not here,

as in other parts of India, a regular succession of land and sea winds.

The dry and hot season is from April till June; but particularly in the two last months, the air is sultry, and the winds hot, and there are few or no showers fall, unless accompanied with storms, at which time there are torrents of rain, which cool the air; and it is observed by all who reside at Bengal, that if these storms are frequent, they render this period healthy; so that, even in this unwholesome country, the rains, which do not overflow the grounds and become stagnant, are conducive to health, and prevent diseases.

The cold season is from the end of November till March; and there is not in the whole world a more delightful place than Calcutta during these months.

It is not at all surprising that the situations we have mentioned should be annually visited with fatal and destructive diseases; for, independent of great heat, this would be the case in any other flat and marshy country.

As

As I had an opportunity of ſeeing the epidemic diſeaſes which raged here in 1768-9, in all their different forms, I ſhall juſt mention the prevaling diſeaſes through the different periods of the year, leaving the detail of ſymptoms and method of cure to another place*.

The putrid remittent fever and dyſenteries are the fatal and prevailing complaints of the wet months, which begin in Auguſt and continue till November. During the beginning of the epidemic, the fever is attended with the greateſt danger and malignity; it frequently carries off the patients in twelve hours, and, if it is not put a ſtop to, generally proves fatal on the third or fourth day. In Auguſt, the remiſſions are very imperceptible; in October, they become more diſtinct; and, as the cold weather comes on, they differ in nothing from regular intermittents. At that time too, the putrid dyſentery begins to rage along with the fever. At the beginning, it is im-

* Vide Part II. Chap. ii.

poſſible to diſtinguiſh the two diſeaſes, which are frequently combined; and, what is ſtill worſe, it often happens, when the fever is removed, and the patient in a convaleſcent ſtate, he falls into the dyſentery; his ſtrength and ſpirits being ſunk, after lingering out ſometimes a few days, and ſometimes weeks, death cloſes the ſcene, and puts an end to his miſerable exiſtence. Both the fever and flux, if obſtinate, have an equal tendency to terminate in abdominal obſtructions, particularly in fatal ſwellings, and ſuppurations of the liver.

Theſe diſeaſes were very frequent and fatal to many Europeans, particularly to the new comers in the year 1768; but I am informed, that, in the year 1770, being accompanied with a ſcarcity of rice, it was computed, that above eighty thouſand natives, and one thouſand five hundred Europeans, died at Bengal. The ſtreets were crouded with funerals, the river floated with dead carcaſes, and every place exhibited the moſt melancholy

ſcenes

ſcenes of diſeaſe and death *. During the ſickly ſeaſons at Bengal, the uncertainty of life is ſo great, that it frequently happens that one may leave a friend at night in perfect health, who ſhall not ſurvive the following day. There have been ſeveral melancholy inſtances of perſons who have returned home in a ſtate of perfect health from performing the laſt duties to a deceaſed friend, and have next day been numbered with the dead. The cool agreeable ſeaſon, from December to March, is productive of no diſeaſe. The complaints to be met with are few, and are in general the conſequence or remains of the diſeaſes of the former period. The diſeaſes which the Europeans are ſubject to in the dry months are the colera and diarrhœa. Fluxes and fevers are ſeldom epidemic;

* It has been a religious cuſtom of the natives, from time immemorial, to bury their dead in the river Ganges. The deceaſed, as ſoon as their breath is out, are carried below high-water mark, and ſuffered to lie there till the approach of the tides carry them off.

 and

and when they do happen, are not attended with much danger.

Charnagore and Chinſura, the French and Dutch ſettlements, on the oppoſite ſide of the river Ganges, being ſituated farther up the country, where the ſoil is better and free from marſhes, are tolerably healthy, even during the rainy ſeaſons; and when the ſame diſeaſes happen, they are neither ſo univerſal, nor are they attended with ſo great malignity. I now proceed to take a ſurvey of the eaſtern coaſt of the Bay of Bengal.

From the mouth of the Ganges to Chatigan, the coaſt, which may be conſidered as a chain of ſmall iſlands, is very low. Chatigan is a ſubordinate factory belonging to the Engliſh. It is healthier than Calcutta; however, all Europeans reſiding on the coaſt of Aracan are ſubject to fevers and fluxes, which are more frequent during and after the rains.

The coaſts of Pegu and Tenaſſerim are only frequented by country veſſels, the trade conſiſting of tutenague, which they carry to the different parts of India. The

mor-

mortality, which frequently happens among the European officers who trade there, shews the climate to be very unhealthy. The rains and sickly season happen in the same months as at Bengal, and the diseases are of the same class, and attended with an equal degree of malignity.

The islands of the Negrais, lying near the coasts of Pegu, are low, and in many places covered with woods, from which arise great exhalations. The East-India company lately endeavoured to make a settlement here, but were prevented by the natives; which, in all probability, has saved the lives of many Europeans, who would undoubtedly have fallen a sacrifice to the insalubrity of the climate.

The Malay coast is but little known. In coasting along, the aspect of the country is very unfavourable; it appears low, woody, and uncultivated.

The Dutch settlement of Malacca, situated on the extremity of this peninsula, lying in 2 deg. 12 min. N. is pleasant and healthy. The situation of the

town, and particularly of the fort, is elevated. The lands near the town, agreeable to the known induſtry of this nation, are well cultivated, and the country around interſperſed with riſing hills and mountains. The air is not exceſſively hot, being refreſhed almoſt every day with land and ſea breezes and pleaſant ſhowers. Here the reſidents enjoy uninterrupted health and ſound conſtitutions; and, from the accounts of all the Engliſh ſhips who have wintered here, we may include it amongſt the number of the moſt healthy European ſettlements in India. The ſame character cannot be given of the oppoſite coaſts of the Streights of Malacca, where the lands of Sumatra are low, ſwampy, and uncultivated. In paſſing theſe ſtreights, in September, 1771, in a voyage to China, the weather was cloſe and ſultry, the nights moiſt and ſuffocating, with heavy fogs; and much rain poured down in torrents, attended with thunder and lightning. By the 20th of the month, above twenty-four of our men were afflicted with putrid remittents

and

and fluxes. It is beyond all doubt, that theſe diſeaſes were occaſioned by the humidity of the weather and exhalations from the land; for as ſoon as we got out to ſea, and were out of reach of the noxious exhalations from the Sumatra ſhore, and the other iſlands, and had the ſhip thoroughly purified, the diſeaſe became milder, and a ſtop was put to the dyſenteric infection, which was becoming general. All our people arrived in good health at the port of Canton, on the 25th of October, where even the weakeſt recovered in a few days.

The iſlands of Java and ſouthern parts of Sumatra are very unhealthy. From November till May is their rainy ſeaſon. During theſe months, the heat, humidity, and evaporations from the marſhes are very great; and from ſultry weather, I have been told, it frequently changes into chilly cold. The fatal diſeaſes, in theſe months, are putrid remittents, and ſometimes continued fevers and malignant

* For a more particular account of the weather, vide Meteorological Regiſter for September.

fluxes.

fluxes. Other parts of Sumatra lying immediately under the line, are continually ſubject to rain, and the ground near the ſhore is low and covered thick with trees and underwood. The heat being intenſe, ſtinking fogs ariſe, which corrupt the air, and render this country fatal to foreigners. Even in the more elevated and hilly coaſts on the ſouth-weſt of the iſland, which, at a diſtance, exhibits a more favourable ſituation, the low grounds are covered with impenetrable woods and long graſs. The land of North Iſland, which lies on this coaſt, near the beginning of the Streights of Sunda, appears, at a diſtance, finely variegated; but, at the place where the wood and water is to be got, it is low and covered with impenetrable mangroves, and infeſted with a variety of inſects, ants, and blood-ſucking gnats. It is here that moſt of the Eaſt-India ſhips wood for their homeward voyage. A Daniſh ſhip, in 1768, anchored at this iſland, and ſent twelve of their people on ſhore to fill water, where they only remained two nights,

nights; every one of them were feized with a fever, of which none of them recovered; and although the fhip went out to fea, and the fick were not removed from the reft of the people, none, except the twelve who flept on fhore, were attacked with the complaint. From fuch melancholy inftances as this, which frequently happen in other parts of India, it is to be hoped, that the commander of every fhip will beware of allowing the people to fleep on fhore, in fuch unwholefome unperflated places. The improvements which are every day taking place at Bencoolen will foon render that fettlement healthy. The refidents there having totally relinquifhed the old town, which was wet and low, and refiding at Fort Marlborough, on a drier and more elevated fituation, are not fo fubject to ficknefs in the rainy months, and the difeafes which appear are of a much milder nature. Upon the whole, the infalubrity of this ifland feems to be owing to want of culture. In many places the foil is luxuriant, and in par-

ticular

ticular on the north-east end, the country is diversified with high grounds, rising hills, and mountains.

The uncultivated parts of the large island of Borneo is subject to the same intemperature of climate as Sumatra; and this too is the case of the Celebes, the Molucca, or Spice Islands.

The Spanish settlement of Manilla, on the island of Luconia, which is the chief of all the Philippines, has its unhealthy seasons. The land for many miles round this beautiful city is low. In June and July, the humidity of the air is great, and the heat of the sun is intense, which raises noxious exhalations. In these months, fevers and fluxes are frequent, some years carrying off a great number of the inhabitants; however, no country in the world is more agreeable during the rest of the year; the climate is temperate; the fields are covered with perpetual verdure, and produce all the varieties of tropical fruits.

SECT. III.

China and Maccao.

THE whole empire of China is extremely delightful, the ſoil is rich, the air pure, and the induſtry of the inhabitants aſtoniſhing. As it produces every luxury and neceſſary of life, it is juſtly eſteemed one of the moſt fertile countries in the world. As the Chineſe admit of polygamy, prohibit emigration, and ſeldom or never engage in war, their empire is extremely populous. Every river maintains a proportion of inhabitants adequate to the land, whole families living continually in boats, without having any other place of reſidence. Their number of people lays them under the neceſſity of carrying induſtry to the greateſt height, for otherwiſe their country, fertile as it naturally is, would be inſufficient to maintain the inhabitants. Every inch of land is cultivated; no foreſts, nor woods, nor even a ſingle tree, is ſuffered to obſtruct the labours of the huſbandman. Canals are

are cut out every where to water the fields; and from the canals are reservoirs of water; and marshes are manured for the cultivation of rice. By this means, health and plenty are the portion of its inhabitants through all the seasons of the year. The only terrible and fatal diseases to which they seem to be subject are the small-pox and leprosy, two of the most nauseous distempers which afflict the human race; but, as it is not my intention to dwell upon the diseases of the natives, a subject to which, perhaps, no European will ever be equal, I shall confine my observations to the port of Canton, the only part in the Chinese empire frequented by the Europeans; and even here the severe policy of this nation renders any account of the situation very imperfect.

The usual station of all European ships in Canton river is at Wampoa, a village, situated about fourteen or sixteen miles below the city of Canton. On one side, the land is low, marshy, and covered with water, fit only for the cultivation of rice. The extent of these swamps are con-

considerable; the tides rise very high and overflow great part of them; but the intersection of the river renders the rice lands more pure than they would otherwise be, and consequently the air is much healthier than one could well expect from the unfavourable aspect.

On the opposite side, the French and Danes Islands are formed by the intersection of this large river. The land on Danes Island is high, and affords an excellent prospect of the country around, which consists of a variety of other islands agreeably diversified with rising hills, pleasant verdant valleys, with numbers of fine villages.

The city of Canton is built on a wide extended plain, and is very large and populous. Here the government allow the English, Dutch, French, Danes, and Swedes, separate factories on the banks of the river. The city, though paved, is very wet in rainy weather, and the water makes its way under the factories of the different nations every tide. The houses are built of bricks; the apartments are

are in general ſmall and not very lofty; and the ground ſtories are very damp. When the buſineſs of the ſeaſon is over, the ſupercargoes remove to Maccao, a Portugueſe iſland, ſubject to the Chineſe government. The city of Maccao is ſituated on a riſing ground; the whole iſland is dry, rocky, and barren; they are, however, plentifully ſupplied with proviſions by the Chineſe; and though the air is very ſultry, yet it is tolerably healthy.

The heat of the places juſt mentioned, as well as of all the ſouthern parts of China, is exceſſive during the ſummer months, particularly in June, July, and Auguſt. In September and October, the weather is ſtill ſultry in the day-time, but cold and chilly, with north-eaſterly winds, at nights. December, January, and February are the cold months; and during this time the viciſſitudes of the weather are more quick than in any other part of the world. When the winds are northerly, the weather is cold, and the thermometer at 46 deg. and upon a change

change of the wind to the south, it is next day up at 60 or 70. People who reside here are always at a loss, with regard to their clothing, one day finding a silk coat sufficient, and the next, upon a sudden change of the wind, finding it necessary to wear a flannel waistcoat.

In July and August, the climate is excessively sultry; and the seamen living at Wampoa are subject to dangerous remittent or continued fevers, which are no ways different from the epidemics of other warm climates. In November, these fevers change into regular intermittents, which admit of an easy cure by the cortex, and are seldom or never attended with great danger. During the above period fluxes are frequent, and seem to be the most prevailing endemic; and although they are not so fatal here as at Bengal, yet if they are neglected at first, they are frequently dangerous, and always very troublesome, often baffling the power of every medicine, till such time as a change of climate is produced by setting out to sea. In 1771, when

twenty-ſeven European ſhips were ſtationed at Wampoa, theſe diſeaſes were very univerſal, and carried off numbers. In November, about a third of our people laboured under double tertians, regular agues, and the dyſentery. The ſame diſeaſes prevailed equally in the other ſhips; and unleſs the bark was given early in the fevers, and timely evacuation made in the flux, there was little chance of the patient's recovery. The fever and flux were frequently combined, and often changed into one another. In ſome caſes which I have ſeen, where the patients were neglected at firſt, the diſeaſes proved fatal as early as the ſixth day; and in others, where the period was longer, the greateſt ſymptoms of putrefaction appeared.

Upon the whole, the port of Canton, is by no means ſo healthy as it is generally repreſented. The comparative degrees of health which Europeans enjoy here has been aſcertained from the inſtances of the ſupercargoes, which is, however, a very erroneous ſtandard. The generous and regular way in which theſe gentlemen

men live, for the moſt part, exempts them from diſeaſes, and being but few in number, no great mortality can take place amongſt them; but ſeamen, who never obſerve much regularity in their way of living, who work hard in the day-time, are but badly clothed, and not provided againſt the damps and cold north-eaſterly winds at nights, ſeldom fail to be afflicted with the diſeaſes already mentioned.——Even the factors of the different nations who, reſide here for any conſiderable time, experience all the inconveniencies peculiar to every ſultry climate; florid health is a ſtranger to their countenances; their conſtitutions are ſoon weakened and enfeebled; and they become ſubject to habitual fluxes and other complaints, the uſual conſequences of too great relaxation. But from this I would not mean to infer that China is peculiarly fatal to Europeans; on the contrary, there are many circumſtances which render it more ſalutary than moſt of the ſettlements in India. The uſual proviſions and refreſhments to

be met with here are much superior to what can be got in any of the ports of India, and are not exceeded even by England itself. The diseases, however, are of the same nature with those of other warm climates; and when many ships are at this place, they carry off numbers.

Having thus far given some account of the principal European settlements in the East Indies, we shall conclude the whole with a short remark upon the manner of living in this part of the world. The English live in much the same way as in their own country; and if they differ in any thing, it is in carrying luxury to a greater height. At Bengal, and on the Malabar and Coromandel coasts, there is plenty of rice, fruits, greens, and roots, flesh, and likewise in many parts abundance of fish; the poultry is good, the beef poor and very indifferent; and the seamen, who eat freely of it, are subject to the colera, and diarrhœa. The common bread, made of wheat-flour, is very good, and well fermented; the usual drink is arrack punch; but

but amongſt people of faſhion, wine and water, cyder, and country beer * are the uſual diluters of their meals. They are plentifully ſupplied with preſerved fruits, pickles, and claret, from England, and they have in general all varieties of wine. A generous but moderate uſe of wine is conducive to health, and is uſeful in preventing diſeaſes; and it is, indeed, generally obſerved all over India, that the people whoſe circumſtances enable them to drink claret enjoy the greateſt immunity from ſickneſs. Great errors ſeem to be committed in eating luxurious meals of animal food, ſerved up with pickles, rich ſauces, and dreſſed in ſuch a manner as to encourage too much ingurgitation; for it is remarkable, that in warm climates, ſo long as there is the leaſt remains of health, in conſequence of the evacua-

* Country beer is made by mixing one part Dorcheſter beer, or porter, with two or more parts of water, to which a little ginger and a ſufficient quantity of ſugar are added; by this means a very ſtrong fermentation is renewed, and in a few hours the beer is very briſk and exceedingly palatable.

tions being more profuſe, and the conſtitution demanding a greater ſupply, the appetite is encreaſed. Rice, vegetables, and ſpiceries are the common diet of the natives in all warm climates, China not excepted. In imitation of this, * cory and rice is a ſtanding diſh in all European families, which, though complicated, is, perhaps, the moſt ſalutary diet; for in this way a ſufficient quantity of animal and vegetable food can be taken with ſafety to ſatisfy the moſt craving appetite.

CHAP. III.

Obſervations on the Degrees of Heat, in a Voyage to Madraſs and China, in the Year 1771, *and in returning to England, in the Year* 1772.

THE Talbot made another voyage to India, in the year 1771. The

* The principal ingredients of cory ſtuff is Chili pepper, other ſpiceries, and turmeric. Fowls, prawns, and other fiſh, are ſtewed in a proper quantity of this powder, to which a few ſhallots are added, and the whole agreeebly ſoured with lime-juice. The ſtew is ſerved up and eat with abundance of rice.

ſhip's

ſhip's company conſiſted of one hundred and ſeven men. There were ſixteen paſſengers and ſeventy recruits for India. She left the Downs the 16th of February, and arrived at Madraſs the 25th of July. She ſailed from Madraſs with her complement of men, the 23d of Auguſt, and anchored at Wampoa, in the river of Canton, the 25th of October. On the 7th of March, 1772, ſhe ſailed for England, and arrived in the Downs the 1ſt of September.

The diſeaſes which occurred when in the different ports of India, alſo the epidemic complaints in the Streights of Malacca have been mentioned in their proper places. Thoſe at ſea were exactly the ſame as in the former voyage; our homeward paſſage, though tedious, was remarkably healthy, I ſhall only add an exact thermometrical diary, ſhewing the different degrees of heat during the voyage. I am the rather led to do this, as no regiſter of the kind has ever yet been made public; it will ſhew alſo how little reaſon we have to expect inflammatory complaints in regions of the world where there are ſuch long continued heats.

Before we proceed farther, it will be proper to obſerve, that, although the thermometer always ſhews the real heat of the air, yet the degree of heat denoted by it does not always correſpond with that perceived by our ſenſations; which difference, in a great meaſure, depends upon the nature of the ſoil and purity of the air.——Thus, between the tropics, if the air happens to be calm, moiſt, and unperflated, even although the mercury in the thermometer may ſink a degree or two, a much more ſtifling heat is felt than when it ſtood higher, while the air was clear, dry, and ventilated. Again, in the warmeſt weather which I have obſerved in any part of India, when the thermometer has ſtood at 90 deg. if there happened to be an agreeable breeze, the mind has been chearful and the conſtitution vigorous and alert; whereas in an unperflated and unelaſtic atmoſphere, an inſupportable and ſuffocating heat has been felt, which has occaſioned the greateſt debility and languor, when the thermometer never roſe above 80 deg. The

 truth

truth of this fact may be obferved every day in moft warm climates. The fame obferv-ation holds good in the contrary fenfation of cold. Thus, in the higher latitudes of the Cape of Good Hope, in wet ftormy weather, when the thermometer is, per-haps, but little below 60 deg. if the wind is at fouth-weft, there is as great a fenfa-tion of cold felt as in England when the thermometer is only about 40 degrees.

The following obfervations were made with Farenheit's thermometer.——The mercury was contained in a cylinder, and not, as ufual, in a globe or ball; and, upon trial, the points were found perfectly exact. The inftrument was fixed on the infide of the round-houfe window, unlefs when the weather obliged them to be fhut; then it was removed into the open gallery. The former fituation was prefer-red, as the effects of the direct rays of the fun were better guarded againft; but when both the fituations were equally fhaded, I never obferved any material dif-ference. The thermometer was never carried out of the fhip; fo that in eftimat-ing

ing the heat on ſhore, allowances are to be made. On account of the ſandy ſoil and heat of the land-winds at Madraſs, it will be moderate enough to allow 6 or 7 degrees of greater heat than upon water, where the ſhips are anchored.

The force of the winds are denoted by cyphers; 0, calms; 1, light winds; 2, pleaſant gales; 3, freſh gales; 4, ſtorms. The quantity of rain is denoted by dots; ſlight ſhowers or heavy falls of rain, in proportion to the number of dots. Thunder and lightning by the initial letters; and where this mark ⊙ occurs in the column, it is the degree of heat meaſured by the direct application of the ſun's rays to the inſtrument. This experiment was not repeated unleſs in the hotteſt days, owing to the misfortune of breaking a ſmall pocket-thermometer, and the inconvenience and danger of removing the large one. All the reſt of the following tables will be underſtood from the marks at the top of each column.

METEOROLOGICAL REGISTER.

At London, in the hard Froſt of 1771, *the Thermometer being placed on the outſide of a northern Window, ſtood at the following Degrees.*

January.

Day.	Hour.	Deg.
15	8 a. m.	30
	9 a. m.	26
16	9 a. m.	30
	4 a. m.	31
17	9 a. m.	28
	4 a. m.	31

February, 1771.

Day.	Hour.	Therm.	Lat.		Winds.		Weather.
			N.				
21	11 a. m.	57	47	36	S W	3	Foggy
22	11 a. m.	58	47	26		4	Thick Fog
23	11 a. m.	59				2	Clear ſunſhine
24	11 a. m.	68				2	Sunſhine
25	11 a. m.	58	45	55	W	4	Sun ſhine
[illegible]	11 a. m.	58			S W	3	Hazy
2[illegible]	11 a. m.	61	44	55	W	2	Fair
28	11 a. m	59	44	28	S W	3	Sunſhine

Day.	Hour.	Therm.	Lat. obs.	Long from Lond.	Winds.	Weather.
			N.	W.		
1	11	58	43 44	11 35	W b S 2	Sunshine
	3	59				
2	11	59	42 26	11 52	W N W 1	Cloudy ·
	4	60				
3	11	60 ½	40 46	12 20	N W 2	Clear
	4	63				
4	11	60	39 11	12 34	W b N 2	Clear
	4	63				
5	9	62	38 24	12 37	W b N 2	Cloudy ·
	4	62 ½				
6	9	62	37 8	12 9	NWbN 2	Cloudy
	4	62				
7	9	59	35 36	13 54	N 2	Cloudy · · T L
	4	61				
8	9	62	34 40	15 38	N 3	Cloudy · · ·
	4	64				
9	9	64		15 2	W S W 2	Cloudy
	4	64				
10	9	64	32 9	14 27	S W 2	Sunshine
	12	72 ☉				
11	9	66	32 27	14 58	S 0	Sunshine
	12	81				
12	7	67	31 57	15 32	Variable 0	Sunshine
	4	70				
13	9	66	31 31	15 47	0	Cloudy
	4	67				
14	11	66	30 27	16 15	N N W 2	Cloudy
	5	65				
15	10	66	29 8	18 1	N E 2	Cloudy
	4	66				
16	9	66	27 43		N E 2	Cloudy
	4	66				
17	11	66	25 50	17 30	N.E 2	Hazy
	4	70				
18	11	68	23 24	18 2	N E 2	Cloudy, L
	4	70				

Day.	Hour.	Therm.	Lat. obſ.	Long from Lond.	Winds.		Weather.
			N.	W.			
19	9	69	28 41	17 42	N E	2	Cloudy
	12	95 ☉					
20	10	71	17 42	18 8	N E	2	Hazy
	4	72					
21	9	72	15 31	18 8	N E	2	Clear
	4	74					
22	9	74	13 20	18 8	N E	2	Hazy
	4	75					
23	9	75	10 37	18 8	N E	2	Sunſhine
	4	75					
24	9	77	10 37	18 8	N	1	Fair
	4	78					
25	10	79	9 34	18 8	N	1	Sunſhine
	4	80					
26	11	81	6 34	18 11	N W	2	Hazy
	4	82					
27	11	82	5 24	18 12	N	1	Hazy
28	11	82		18 5	N	1	Fair
	4	84					
29	4	85	4 44	17 49	N b E	1	Hazy, at night T L···
30	4	82	4 21	17 45	N E		Hazy ·
31	4	83		17 24	0		···

Day.	Hour.	Therm.	Lat. obs.	Long. from Lond.	Winds.	Weather.
			N.	W.		
1	8	82	1 56	17 26	Variable 0	Cloudy, at night ···
	4	82				
2	11	84	1 19	17 26	Variable 1	Cloudy
3	11	83	42	17 53	Variable 0	Cloudy ··
4	11	80	30	18 4	Variable 1	Hazy
	4	81				
			S.			
5	11	82	7	18 54	S E 2	Hazy
	5	83				
6	11	81	1 19	19 40	S E 1	Fair
	12	92 ⊙				
7	11	81	2 41	20 13	S E 2	Cloudy
	4	82				
8	11	82	3 47	20 45	S E 1	Cloudy
	4	83				
9	11	82	4 33	20 51	S E 1	Cloudy
	4	84				
10		84	6 3	21 9	S E 2	Hazy ···
11		83	8 27	21 45	S E 2	Cloudy
12	11	82	9 45	21 49	S E 2	Hazy
	4	82				
13	11	81	11 1	22 17	S E 2	Clear
	4	81				
14	11	81	12 19	22 47	S E 2	Hazy ·
	4	82				
15	11	81	13 33	23 17	S E 2	Fair
	4	82				
16	11	80	14 7	23 37	S E 2	Fair
	4	80				
17	8	79	14 15	23 55	S E 2	Cloudy ·
	3	80				
18	8	80	14 28	24 13	S E 2	Cloudy
	3					
19	8	80	15 32	25 3	S E 2	Cloudy
20	8	80	17 12	25 47	S E 2	Cloudy
	3	81				
21	8	80	18 48	25 29	Variable	Cloudy

Day.	Hour.	Therm.	Lat. obs.		Long. from Lond.		Winds.		Weather.
			S.		W.				
22	8	80	20	3	25	14	S E	2	Cloudy
	3	81							
23	8	79					S E	2	Hazy
	3	79							
24	8	78	22	21			Variable	0	Cloudy
25	8	78	22	11	29	19	Variable	1	Rainy
26	8	78	23	16	29	6	E	1	Fair
27	8	78	24	38	28	28	Variable E	2	Cloudy
	3	76							
28	8	78	25	28	27	23	E	2	Fair
29	8	77	26	9	26	43	E	1	Cloudy, ecl. of the moon
30	8	75	26	46	25	59	Variable	1	Fair
	3	76							

Day.	Hour.	Therm.	Lat. obſ.	Long. from Lond.	Winds.	Weather.
			S.	W.		
1	8	72	27 59	24 38	Variable 2	Squally
	3	73				
2	8	69	28 45	23 22	E 4	
	3	69				
3	8	66		21 55	N N W	Continual ſmall rain
	3	67				
4	8	66	29 56	29 25	S S W 3	Cloudy
	3	67				
5	8	65		18 35	S S W 1	Lowring
	3	66				
6	8	70		15 19	N W 3	Dark and cloudy
7	11	65	32 5	10 34	N b E 3	Cloudy
8	11	66	32 12	7 41	S W 2	Cloudy and fair
9	11	64	31 31	5 40	S S E 2	Clear
10	11	69	30 25	4 41	S E 2	Fair
	3	66				
11	11	69	31 6	4 36	S W 1	Variable rain
12	11	66	31 39	2 48	S W 2	Cloudy
	5	62				
13	11	63	31 50	2	S 2	Squally
	4	63		E.		
14	11	64	32 28	52	Variable	Cloudy
15	11	62	34 0	3 50	N 3	Fair
	5	60				
16	11	63	35 15	7 52	N E 3	Fair
	5	63				
17	11	61	35 40	10 54	S 3	Fair
	6	58				
18	11	63	36 0	12 40	N 1	Fair
	5	61				
19	11	62	36 9	16 47	N 2	Hazy
	5	61				
20	11	64	35 39	19 48	N 2	Cloudy
	5	60				
21	11	63	35 9		Variable 1	Hazy. Saw the Cape
	5	61				

Day.	Hour.	Therm.	Lat. obs.	Long. from Lond.	Winds.	Weather.
			S.	E.		
22	11	58	34 50	24 12	Variable	Rainy ••
	5	56				
23	8	59	34 47	25 50	Variable 0	Pleasant weather
	11	64				
24	11	66	35 10	28 31	W 2	Fair
	6	62				
25	11	65	34 37	30 3	Variable	Squally ••
	6	61				
26	11	64	35 29	29 41	S E 3	Fair
	6	62				
27	11	66	36 49	30 50	N E 2	Cloudy and squally
	5	65				
28	11	69	37 5	32 56	Variable 3	Squally
	5	68				
29	11	68	37 15	33 40	Variable	Unsettled and rainy ••
	5	66				
30	11	65	35 39	33 37	Variable 2	Lowring & rainy••• L
	4	64				
31	11	63	36 36	34 22	Variable 3	Rainy •• and squally
	4	62				

Day.	Hour.	Therm.	Lat. obs.	Long. from Lond.	Winds.		Weather.
			S.	E.			
1	11	64	35 24	36 15	S	3	Squally T L rainy · :
	5	63					
2	11	66		37 36	S	2	Cloudy · · ·
	5	65					
3	11	66		39 15	N W	3	Fair
	5	64					
4	11	64	31 25	40 36	N W	3	· · · T L
5	11	69	29 38	41 55	W	2	Cloudy
	5	69					
6	11	70	28 35	42 34	W N W	2	Fair
	5	71					
7	11	71	28 6	43 56	N E	2	Fair
	5	70					
8	11	74	25 48		S W	2	Fair
	5	72					
9	11	80	26 47		E b S	3	Fair
	5	76					
10	11	81	26 45		N W	2	Fair
	5	74					
11	11	69	26 4		W S W	3	Cloudy
	5	68					
12	11	71	24 15		S S E	2	Cloudy
	5	70					
13	11	72	22 19		S S E	3	Fair
	5	74					
14	12	74	19 40		S S E	2	Fair
	5	75					
15	11	75	18 18		S S W	2	Fair
	5	76					
16	11	77	16 41		S S W	2	Fair
	5	78					
17	11	79	14 21		S S W	2	Fair
	5	80					
18	11	80	12 45		S S W	2	Cloudy
	5	80					

Day.	Hour.	Therm.	Lat. obs.	Long from Lond.	Winds.		Weather.
			S.	E.			
19	11	85	At Johanna		S b E	1	Fair
	5	85					
20	11	87			S S W	1	Cloudy
	6	85					
21	11	89			S E	1	Fair
	6	84					
22	11	86	12 7			0 1	Fair
	5	80					
23	11	80	10 24	43 47	S	2	Fair
	5	79					
24	11	80	8 21	43 55	S W	2	Fair, dews at night
25	11	80	6 12	44 6	S W	2	Cloudy, dews at night
	6	79					
26	11	79	4 31	44 14	S S E	2	Clear, dews at night
	5	79					
27	11	80	2 39	45 17	S S W	2	Fair, dews at night
	6	76					
28	12	79	0 44	46 56	S W	2	Cloudy, dews at night
	6	78	N.				
29	12	81	1 4	48 25	S W	3	Hazy
	6	79					
30	12	81	2 26	50 48	S S W	3	Fair
	3	83					
	6	79					

Day.	Hour.	Therm.	Lat. obs.	Long. from Lond.	Winds.	Weather.
			N.	E.		
1	12	82	3 29	53 15	W S W 3	Cloudy
	6	81				
2	12	83	4 34	56 12	SWbW 3	Hazy ···
	6	82				
3	12	85	5 23	58 32	SWbW 3	Cloudy
	6	83				
4	12	85	5 55	60 44	W S W 2	Fair
	6	84				
5	12	84	6 14	62 23	W b S 2	Fair
6	12	85	6 43	64 0	W b S 2	Squally ··
	6	83				
7	12	86	7 11	65 44	W b S 2	Cloudy ··
	3	88				
8	12	87	7 23	67 6	S W 2	Cloudy ·
	3	88				
9	12	87	7 47	68 46	SWbW 2	Cloudy
	3	88				
10	12	86	8 10	70 44	SWbW 2	Squally ···
	3	88				
11	12	86	8 12	72 22	W S W 2	Fair
	3	87				
12	12	87	7 23	74 0	S W 2	Cloudy
	3	89				
13	12	86	6 36	75 45	W 2	Cloudy ···
	6	84				
14	12	85	5 47	77 43	W N W 2	Fair
	3	88				
15	12	86	6 24		W 2	Fair
	3	87				
16	12	89	7 8		S b W 1	Fair
	3	80				
17	12	87	7 12		N b W 1	Cloudy
	6	85				
18	12	87	7 3		S E 1	Fair
	6	85				

Day.	Hour.	Therm.	Lat. obſ.	Long from Lond.	Winds.	Weather.
			N.	E.		
19	12	89	8 35		W S W 1	Cloudy
20	12	92	9 29		0	Fair
	6	86				
21	12	88	10 36		S W 1	Cloudy
	6	86				
22	12	88	11 23		S E b S 1	Fair
23	12	90	12 7		E 1	Cloudy
	6	98				
24	12	30	12 36		E 2	Fair
	6	96				
25	12	88	At Madraſs	80 32		
26	12	90			E 2	Squally . . . T L
	3	93				
27	12	90			S 2	Cloudy, T L
	3	93				
28	12	90			S 2	T L
	3	92				
29	12	93			S 2	Sea and land breezes
	4	96				
30	12	90			S 3	Fair, ſea and land br.
	4	94				
31	12	91			S 3	Cloudy, ſea and land br.
	4	93				

Day.	Hour	Therm.	Lat. obſ.	Long from Lond	Winds.	Weather.
1	12	93	At Madraſs		land&ſea 1	Cloudy, rainy ·
	4	94				
2	12	92			land&ſea 1	Rainy · ·
	4	90				
3	12	90			land&ſea 2	Fair
	3	91				
4	12	90			land 1	Cloudy
	4	92				
5	12	92			land 1	Rainy · ·
	4	94				
6	12	89			land&ſea 1	Fair
7	12	90			land&ſea 1	Fair
	5	92				
8	12	93			land&ſea 2	Rainy, T L
	7	96				
9	12	89			land&ſea 2	Cloudy · ·
	4	87				
10	12	93			land&ſea 2	Rainy ·
	4	88				
11	2	94			land 1	Rainy · ·
	4	89				
12	12	93			land&ſea	Fair
	4	90				
13	12	90			land&ſea 3	Fair
	4	87				
14	12	89			land&ſea 2	Fair
15	12	89			land&ſea 1	Rainy ·
	3	90				
16	12	90			land 2	Squally, rainy · ·
	4	94				
17	12	94			land 2	Squally, rainy · · ·
18	12	93			land 1	Fair
19	12	90			S 3	Rainy · · · ·
	4	87				
20	8	90			land&ſea 2	Fair
	3	94				
21	8	92			land&ſea 1	Fair
	3	95				

Day.	Hour.	Therm.	Lat. obs.	Long. from Lond.	Winds.		Weather.
			N.	E.			
22	11	94			S W	2	Cloudy
	4	87					
23	10	86	10 58	81 48	S E	2	Fair
	3	88					
24	10	85	10 0	83 20	E	2	Fair
	3	87					
25	10	85	8 52	85 18	S W	1	Cloudy
	3	87					
26	10	86	7 32	87 14	S W	2	Fair
	3	89					
27	10	85	6 41	89 4	S W	2	Hazy
	3	87					
28	10	85					
	12	88	6 19	90 44	S W	1	Hazy
	6	90					
29	8	85	6 7	92 3	W	1	Cloudy
	3	89					
30	8	85	6 1		W	2	Cloudy
	3	88					
31	8	87	5 38		W	1	Cloudy
	3	90					

Day.	Hour.	Therm.	Lat. obſ.	Long from Lond.	Winds.	Weather.
			N.	E.		
1	8	87	5 47		0	Hazy
	3	93				
2	8	85	4 48		Variable 1	Cloudy
	3	92				
3	8	85	4 22		N W 2	Rainy · · · ·
	3	92				
4	8	85	3 45		W 1	Hazy, rainy, dews at n.
	3	89				
5	8	85	3 23		E 1	Rainy, T L
	8	88				
6	8	87	3 12		S E 2	Cloudy, at n. dews T L
	3	92				
7	8	85	3 23		S E 1	Cloudy, at n. dews T L
	3	90				
8	8	85	3 7		Variable 1	Cloudy, · · · dews T L
	3	89				
9	8	85			N 1	Rainy · · · T L at n.
	3	90				
10	8	80	2 0		N 1	Fair
	3	85				
11	8	85	2 16		S 1	Cloudy
	3	90				
12	8	85		102 11	Var. 1, 0	Rainy · · · · T L
	3	89				
13	8	85	Saw Ma-		E 2	Fair
	3	87	lacca			
14	8	85			E 1	Cloudy · ·
	3	88				
15	8	85			S	Rainy · ·
	3	88				
16	8	85	St.		W 1	Fair
	3	89	John's			
17	8	86	1 44		N 1	Rainy · · ·
	3	89				
18	8	86			N 0	Fair
	3	89				
19	8	85	2 36		S 1	Squally · · ·
	3	88				

Day.	Hour.	Therm.	Lat. obs.	Long. from Lond.	Winds.		Weather.
			N.	E.			
20	8 3	85 87	3 4		S	2	Fair
21	8 3	84 86	4 44	105 21	S	2	Squally · · · T L
22	8 3	83 79	6 5	105 36	S b E	1	Rainy · · · and foggy
23	8 3	86 87	7 5	105 37	Variable		Cloudy · · ·
24	8 3	84 86	8 35		S W	2	Fair
25	8 3	83 85	9 58		S W	2	Hazy
26	8 3	84 86	10 46	112 2	W	2	Cloudy, T L
27	8 3	84 86	11 28	112 30	W	2	Unsettled & rainy · · ·
28	8 3	83 86	11 57	113 18	N	2	Squally, rainy · · · T L
29	8 3	84 86	12 58	113 52	N W	1	Cloudy ·
30	8 3	85 88	12 33	114 16		0	Clear and sultry

Day.	Hour.	Therm.	Lat. obs.	Long. from Lond.	Winds.	Weather.
			N.	E.		
1	8	85	12 13	114 33	Variable 1	Cloudy
	3	88				
2	8	86	12 44	114 57	NWbW 1	Fair
	3	89				
3	8	85	13 15	115 17	N W 1	Fair
	3	90				
4	8	86	13 57	115 33	N W 1	Cloudy · ·
	3	90				
5	8	86	13 57	115 55	N W 2	Cloudy ·
	3	90				
6	8	86	14 28	116 14	N W 1	Cloudy ·
	3	86				
7	8	86	14 43	116 11	Variable	Squally ·
	3	86				
8	8	85	14 33	116 14	Variable	Hazy T L
	3	87				
9	8	84	15 8	116 0	Variable 0	Rainy
	3	86				
10	8	85	16 7	115 12	N E 2	Dark and cloudy · · L
	3	87				
11	8	86	16 36	114 52	N E 3	Cloudy L
	3	87				
12	8	85	17 0	114 49	N E b E 2	Cloudy, rainy ·
	3	88				
13	8	85	17 36	114 58	E N E 2	Cloudy
	3	87				
14	8	84	18 57	114 56	E N E 2	Fair
	3	86				
15	8	84	20 18	114 46	E N E 2	Cloudy
	3	86				
16	8	85	20 15	115 21	N E 3	Cloudy
	3	86				
17	8	84	21 9	115 18	N E 3	Cloudy
	3	86				
18	8	80	21 48		E N E 2	Fair
	3	84				

Day.	Hour.	Therm.	Lat. obs.	Long. from Lond.	Winds.		Weather.
19	8	80	At Maccao.		S W	1	Fair
	3	85					
20	8	81			S W	1	Fair
	3	84					
21	8	82			S E	1	Fair
	3	85					
22	8	78			N	2	Fair
	3	80					
23	8	76			N	1	Fair
	3	83					
24	8	76			N	0	Fair
	3	84					
25	8	78	At Wampoa, China		N	1	Fair
	3	84					
26	8	80			N E	2	Cloudy
	3	85					
27	8	79			N	1	Cloudy
	3	84					
28	8	80			N	1	Fair
	3	85					
29	8	75			N E	1	Cloudy and rainy
	3	78					
30	8	72			N	3	Cloudy
	3	74					
31	8	70			N	2	Rainy
	3	72					

Day.	Hour.	Therm.	Lat. obs.	Long. from Lond	Winds.		Weather.
1	8	70	At China		N	1	Rainy
	3	72					
2	8	71			N	1	Clear sunshine
	3	74					
3	8	75			N	1	Fair
	7	77					
4	8	75			N	1	Fair
	2	80					
5	9	78			N	1	Fair, dews at night
	4	79					
6	11	76			N	1	Fair, dews at night
7	10	78			N	1	Clear
	4	78					
8	10	70			N	2	Heavy dews at night
	5	77					
9	11	75			N	1	Fair
	4	73					
10	11	77					Fair
	4	75					
11	12	76			N	2	Cloudy
	4	78					
12	11	69			N E	3	Fair
	4	65					
13	12	66			N	3	Cloudy
	4	66					
14	11	67			N	2	Fair, dews at night
30	8	65			N	1	Fair, dews at night
	3	67					
	11	60					

From the 14th to the 30th of this month, no regular thermometrical diary was kept. The weather, though temperate and warm in the day-time, was chilly at nights, with heavy dews.

Day.	Hour.	Therm.	Lat. obs.	Long. from Lond.	Winds.		Weather.
25	8	61	At China		N	2	Fair, at night dews
	6	59					
26	8	63			N	1	Cloudy
	3	62					
27	8	62			N	2	Fair, at night dews
	6	58					
28	8	62			N	1	Cloudy
	11	55					
29	8	60					
30	8	53			N E		Fair
	11	54					
31	8	54			S		Fair
	4	58					

From the beginning to the 25th, the weather was temperate in the middle of the day, the winds northerly and northeasterly, with dews at nights.

Day.	Hour.	Therm.	Lat. obs.	Long from Lond.	Winds.		Weather.
1	8	56	At China		S	1	Fair
	3	66					
2	8	59			S	1	Fair
	8	66					
3	8	60			S	1	Fair
	8	67					
4	8	62			S	1	Fair
	8	67					
5	8	63			S	1	Fair
	8	66					
6	8	53			N E	2	Cloudy
	8	56					
7	8	62			E	2	Fair
	4	60					
8	8	60			E	2	Fair
	4	63					
9	8	61			E	1	Cloudy
	4	62					
10	8	62			E	2	Fair
11	8	62			E	2	Hazy
	3	64					
12	8	64			E	1	Cloudy · ·
	3	63					
13	8	62			E	2	Cloudy
	4	64					
14	8	53			N E	2	Cloudy
	4	54					
15	8	54			N E	2	Rainy ·
	4	60					
16	8	56			N E	2	Cloudy ·
	3	58					
17							
18							
19	8	49			N	1	Cloudy and rainy ·
20	8	50					
	3	54					
22	8	54					Fair · at night
	3	54					

Day.	Hour.	Therm.	Lat. obs.	Long from Lond.	Winds.	Weather.
23	8	52	At China		N E 2	Fair
	3	53				
24	8	48			N E 2	Rainy ··
	4	50				
25	8	50			N E 3	Cloudy, · at night
	8	46				
26	8	42			N E 3	Rainy ····
	4	46				
27	8	50			N E 3	Rainy ···
	4	52				
28	8	51			N E 3	Fair
	4	53				
29	8	54			N E 2	Fair
	4	56				
30	8	54			N E 3	Cloudy
	3	55				
31	8	56			NE 2	Rainy ···
	4	56				

Day.	Hour.	Therm.	Lat. obs.	Long. from Lond	Winds.		Weather.
1	8	55	At China		N E	1	Rainy · · ·
	3	57					
2	8	56			N E	3	Rainy · · · ·
	3	58					
3	8	58			N E	2	Fair
	6	59					
4	8	59			N E	2	Fair
5	8	60			N E	2	Rainy ·
	3	59					
6	8	60			N E	1	Rainy ·
	3	59					
7	8	60			N E	1	Cloudy
8	8	62			S	1	Fair
9	8	63			S	2	Fair
	3	62					
10	8	64			W	2	Fair
	3	61					
11	8	64			S W	2	Fair
	3	63					
12	8	63			S W	1	Fair
13	8	61			N	1	Cloudy
	8	58					
14	8	59			N	2	Gloomy · · ·
	8	57					
15	8	59			N	1	Fair
	3	60					
16	8	62			N	2	Fair
	3	63					
17	8	62			S	2	Rainy · ·
	3	61					
18	8	62			S	2	Cloudy · ·
	3	60					
19	8	61			N	1	Cloudy
	3	62					
20	8	62			NE	1	Fair
	3	64					

Day.	Hour.	Therm.	Lat. obſ.	Long from Lond.	Winds.	Weather.
21	8	65	At China		N 1	Fair
	3	66				
22	8	68			N E 1	Fair
	3	70				
23	8	68			N 1	Fair
	3	70				
24	8	69			N E 1	Clear ſunſhine
	3	70				
25	8	69			N E 1	Fair
	3	50				
26	8	70			N E 1	Fair
	3	72				
27	8	72			N E 1	Fair
	3	74				
28	8	74			S 2	Fair, at night dews
	3	76				
29	8	73			S 1	Fair, at night dews
	3	74				

Day.	Hour.	Therm.	Lat. obſ.	Long. from Lond.	Winds.		Weather.
				E.			
1	8	73	At Wampoa, China		S	2	Fair
	3	74					
2	8	72			S	2	Cloudy
	3	74					
3	8	72			S	2	Gloomy, T L ···
	3	72					
4	8	69			S	2	Gloomy ···
	3	71					
5	8	59			N	3	Gloomy
	3	60					
6	8	58			N	2	Cloudy and dark
	3	53					
7	8	62	Maccao.		N	3	Cloudy
	3	67					
			N.				
8	8	67	18 0	114 35	E	2	Fair
	3	70					
9	8	75	18 8	115 16	E	2	Cloudy · ·
	3	76					
10	8	77	16 51	115 24	Variable	1	Fair
	3	78					
11	8	79	16 16	115 20	Variable	2	Cloudy
	3	80					
12	8	79	14 54	115 1	Variable	2	Cloudy
	3	80					
13	8	81	13 26	114 4	E N E	2	Clear
	3	81					
14	8	82	12 32	113 24	E	2	Fair
	3	83					
15	8	83	11 40	112 44	E		Fair
	3	84					
16	8	83	11 2	112 5	E	1	Cloudy
	3	84					
17	8	83	10 23	111 26	E	2	Fair
	3	84					
18	8	83	9 15	109 42	E N E	2	Fair
	3	83					

Day.	Hour.	Therm.	Lat. obs.	Long. from Lond.	Winds.	Weather.
			N.	E.		
19	[illegible]	84	8 8	108 27	N E 2	Hazy
	3	84				
20	8	83	6 26	107 23	N E 2	Fair
	3	83				
21	8	84	5 6	106 28	N E 1	Fair
	3	83				
22	8	82	3 4		N E 3	Cloudy · ·
	3	83				
23	8	84	2 13		E N E 2	Hazy · · · ·
	3	83				
24	8	83	0 20		Variable 1	Cloudy · ·
	3	84				
			S.			
25	8	82	1 14		N E 2	Fair
	3	83				
26	8	83			N E 1	Fair
	3	85				
27	8	84	2 31	In the Straits of Banca.	Variable 0	Cloudy
	3	86				
	12	108				
28	8	84	3 5			Cloudy ·
	3	85				
29	8	83	3 7		0	Cloudy ·
	12	106				
	3	87				
30	8	83	3 18		0	Cloudy ·
	3	86				
31	8	83	4 38		E 2	Cloudy ·
	3	86				

Day.	Hour.	Therm.	Lat. obs.	Long. from Lond.	Winds.		Weather.
				E.			
1	8	83	At North Island		N W	1	Fair
	3	88					
2	8	82			N W	1	Fair
	3	89					
3	8	83			N W	1	Fair
	3	86	S.				
4	8	83	6 56	Saw Java	N E	2	Cloudy
	3	85					
5	8	83	7 43	102 59	Variable	1	T L rainy · · ·
	3	85					
6	8	83	8 55	102 14	E	2	Cloudy
	3	85					
7	8	82	9 58	101 57	N E	3	Cloudy · ·
	3	85					
8	8	83	11 41	101 12	E	3	Cloudy
	3	84					
9	8	82	13 18	99 26	S E	3	Cloudy
	3	83					
10	8	81	14 33	96 52	S E	3	Hazy
	3	81					
11	8	80	15 24	94 31	S E	2	Cloudy ·
	3	80½					
12	8	80	15 56	91 53	S E	3	Hazy
	3	80					
13	8	80	16 24	89 7	S E	2	Cloudy · · ·
	3	80					
14	8	80	16 53	86 21	S E	2	Cloudy, at night
	3	80					
15	8	89	17 26	83 52	S E	2	Cloudy, · at night
	3	80					
16	8	80	18 5	81 15	E S E	2	Cloudy, · at night
	3	81					
17	8	80	18 42	79 3	E	3	Cloudy, · · ecl. of moon
	3	80					
18	8	79	18 50	77 30	E	1	Fair
	3	79½					

Day.	Hour.	Therm.	Lat. obs.		Long. from Lond		Winds.		Weather.
			S.		E.				
1[illegible]	8	79	18	52	75	47	E b S	2	Fair
	3	80							
[illegible]0	8	79	19	23	73	30	E b S	2	Fair
	3	79							
[illegible]1	8	79	19	59	71	50	E b S	1	Fair
	3	79							
22	8	79	20	30	70	41	E b N	1	Fair
	3	79							
23	8	78	20	56	69	14	E b S	2	Cloudy ·
	3	79							
24	8	78	21	28	67	44	Variable	2	Cloudy, at night dews
	3	78½							
25	8	76	22	18	65	22	E b S	3	Cloudy, at night dews
	3	77							
26	8	78	23	9	62	43	Variable	2	Fair
	3	80							
27	8	79	24	3	60	54	E	1	Fair
	3	80							
28	8	80	24	52	59	42	Variable	2	Fair · · afternoon
	3	78							
29	8	77	25	17	59	6	N	1	Fair, T L · · at night
	3	76							
30	8	72	25	13	56	36	S b W	2	Cloudy
	3	72							

Day.	Hour.	Therm.	Lat. obs.		Long from Lond.		Winds.		Weather.
			S.		E.				
1	8	74	26	13	54	0	S	3	Fair
	3	75							
2	8	75	27	21	52	4	S E	2	Fair
	3	75							
3	8	76	28	4	49	49	E	2	Fair
	3	76							
4	8	74	28	57	47	39	E	3	Cloudy ·
	3	78							
	6	74							
5	8	74	29	51	45	31	E	2	Fair
	3	78							
6	8	74	30	43	43	29	E N E	2	Variable · · · T L
	3	75							
7	8	76	31	2	42	29	N W	3	Cloudy L
	3	76							
8	8	74	29	54	41	52	W	2	Fair
	3	75							
9	8	76	31	22	39	34	N E	3	Squally, L
	3	75							
10	8	76	30	56	39	22	S W	4	Unsettled · · · · L
	3	77							
11	8	65	30	48	39	2	S W	4	Squally
	3	68							
12	8	66	30	59	38	12	Variable	1	Fair
	3	69							
13	8	68	31	30	36	51	W	3	Cloudy
	3	68							
14	8	70	31	41	36	36	W	3	Fair, · · · at night
	3	71							
15	8	70	31	41	36	28	N	2	Hazy
	3	72							
16	8	76	32	16	36	16		0	Cloudy
	3	74							
17	8	75	33	30	35	18	N E	2	Fair
	3	72							
18	8	75	34	58	33	24	N	3	Hazy
	3	71							

Day.	Hour.	Therm.	Lat obs.	Long. from Lond.	Winds.	Weather.
			S.	E.		
19	8	74	35 5	32 16	W 1	Fair
	3	72				
20	8	62	35 42	31 34	N W 3	Cloudy
	3	60				
21	8	65	34 52	31 34	W 4	Cloudy
	3	65				
22	8	65	35 22	31 43	W 4	Squally
	3	64				
23	8	65	35 3	31 34	W 3	Unsettled
	3	65				
24	8	66	34 35	31 20	W 2	Rainy
	3	66				
25	8	74	34 50	30 18	N E 3	Fair
	3	75				
26	8	70	35 17	29 33	N E 3	Hazy, L at night
	3	72				
27	8	70	35 47	28 8	S W 3	Fair
	3	65				
28	8	70	35 40	27 38	N W 2	Fair
	3	65				
29	8	68	35 9	27 20	W 2	Cloudy
	3	62				
30	8	65	34 58	27 4	0	Fair
	3	64				
31	8	64	35 10	25 54	N W 2	Fair
	3	63				

Day.	Hour.	Therm.	Lat. obs.	Long. from Lond.	Winds.		Weather.
			S.	E.			
1	8	63	35 22	25 41	N W	2	Cloudy, L
	5	61					
2	8	55	35 3	25 37	W	2	Squally,
	3	57					
3	8	58	34 37		Variable	2	Cloudy
	3	59					
4	8	64	32 2		S E	2	Fair
	3	61					
5	8	65	31 35	14 39	E	2	Fair, dews at night
	3	62					
	6	60					
6	8	63	29 39	12 43	S E	2	Fair, dews at night
	3	63					
7	8	64	28 3	11 13	S S E	2	Fair, dews at night
	3	62					
8	8	64	26 45	9 58	S S E	2	Fair, heavy dews at n.
	3	66					
9	8	65	25 42	9 5	N W	1	Fair, heavy dews at n.
	3	66					
10	8	66	24 8	8 33	W	2	Cloudy
	3	67					
11	8	67	23 20	8 8	S b E	1	Fair
	3	68					
12	8	71	23 0	7 53	S S E	1	Clear
	3	68					
13	8	68	22 4	7 3	S W	2	Clear
	3	67					
14	8	68	20 3	5 27	S b E	2	Cloudy
	3	67					
15	8	71	18 58	3 31	S E b S	3	Cloudy
	3	67					
16	8	72	17 21	1 29	S E	3	Cloudy
	3	69					
				W.			
17	8	70	16 14	0 31	S E	3	Cloudy
	3	68					

Day.	Hour.	Therm.	Lat. obs.	Long. from Lond.	Winds.	Weather.
			S.	W.		
18	8	72	16 0	2 26	S E b S 2	Fair
	3	72				
19	8	72	At St. Helena.		E S E 2	Cloudy
	3	73				
20	8	72			S E 1	Fair
	3	73				
21	8	74			S E 1	Cloudy
	3	73				
22	8	72			S E 1	Squally
	3	75				
23	8	75			S E 1	Clear
	3	75				
24	8	75			S S E 1	Cloudy
	3	74				
25	8	74			S E 1	Cloudy
	3	74				
26	8	74			S E 1	Fair
	3	73				
27	8	75			S E 2	Squally
	3	75				
28	10	75		7 10	S E 2	Squally
	3	74				
29	8	73	14 42	8 57	S E b E 2	Fair
	3	73				
30	8	73	13 2	10 29	S E 2	Cloudy
	3	74				

Day.	Hour.	Therm.	Lat. obs.	Long. from Lond.	Winds.	Weather.
			S.	W.		
1	8	75	11 40	11 32	S E b S 2	Dark clouded sky
	3	74				
2	8	76	10 31	11 50	S E b S 2	Cloudy
	3	75				
3	8	77	9 39	12 15	Variable 1	Cloudy
	3	76				
4	8	78	8 54	12 58	S E 1	Fair
	3	79				
5	8	80	8 17	13 37	S E b S 2	Cloudy
	3	79				
6	8	80	6 56	14 26	S S E 2	Cloudy
	3	80				
7	8	80	5 13	15 28	S E 2	Fair
	3	81				
8	8	82	3 39	16 36	E 2	Fair
	3	80				
9	8	81	1 38	17 56	S E 3	Fair
	3	80				
			N.			
10	8	82	0 25	19 12	S E 3	Clear
	3	79				
11	8	82	2 19	20 22	S b E 2	Cloudy
	3	80				
12	8	81	3 57	21 22	S S E 2	Cloudy
	3	82				
13	8	83	5 12	21 48	S S E 2	Cloudy, L at night
	3	85				
14	8	86	6 10	22 3	N N W 1	Rainy · · ·
	3	78				
15	8		7 39	22 29	Variable	Rainy · ·
	3					
16	8	82	8 26	22 44	S S E 1	Cloudy · · · T L
	3	79				
17	8	79		22 56	Variable 1	Cloudy · · · ·
	3	78				
18	8	76	8 35	23 4	Variable c	Squally · · ·
	3	76				

Day.	Hour.	Therm.	Lat. obs.	Long from Lond.	Winds.	Weather.
			N.	W.		
19	8	76		23 22	Variable 0	Rainy ····
	3	77				
20	8	79		23 55	Variable 1	Cloudy ··
	3	78				
21	8	80	11 0	24 30	N W 2	Cloudy ·
	3	82				
22	8	84	11 23	25 10	Variable	Squally ·
	3	85				
23	8	84	12 7	25 54	N E 2	Cloudy ·
	3	84				
24	8	82	13 35	26 32	N E 2	Cloudy ··
	3	80				
25	8	81	15 5	27 24	N E 3	Cloudy ·
	3	82				
26	8	80	16 9	28 56	N E 3	Fair
	3	82				
27	8	79	17 39	30 31	N N E 2	Cloudy, · at night
	3	81				
28	8	80	19 0	32 14	N E 3	Cloudy
	3	82				
29	8	80	21 2	33 48		Cloudy
	3	80				
30	8	81	23 18	34 17	E N E 3	Cloudy ··
	3	82				
31	8	82	25 27	35 38	N E 3	Fair
	3	83				

Day.	Hour.	Therm.	Lat. obs.	Long. from Lond.	Winds.		Weather.
			N.	W.			
1	8	81	27 9	37 17	N E	2	Cloudy
	3	82					
2	8	80	28 15	38 33	N E b E	2	Cloudy, • at night
	3	80					
3	8	82	29 41	38 59	N E	2	Fair
	3	82					
4	8	82	30 50	38 41	E	1	Cloudy
	3	83					
5	8	82	32 16	38 33	E S E	1	Cloudy
	3	84					
6	8	85	32 0	38 56	N E	0	Fair
	3	86			N E	3	Rainy • •
7	8	79	33 21	39 42	N E	2	Cloudy
	3	80					
8	8	79	34 21	40 36	N E	2	Fair
	3	80					
9	8	81	34 58	40 44	S	1	Cloudy •
	3	80					
10	8	81	36 16	39 51	S E	2	Cloudy •
	3	82					
11	8	79	37 53	38 29	S W	2	Fair
	3	80					
12	8	78	39 25	36 37	N W	2	Cloudy • •
	3	80					
13	8	74	40 0	35 22	W	1	Cloudy
	3	78					
14	8	76	41 0	33 34	W	2	Hazy • •
	3	75					
15	8	76	41 4	31 56	N E	2	Cloudy
	3	77					
16	8	75	39 50	30 41	E N E	2	Fair
	3	76					
		69					
17	8	75	40 21	31 13	E	2	Fair
	3	74					

Day.	Hour.	Therm.	Lat. obſ.	Long from Lond.	Winds.		Weather.
			N.	W.			
18	8	74	40 42	29 0	S W	1	Fair
	3	74					
19	8	72	41 48	26 53	W	2	Hazy
	3	74					
20	8	72	42 43	24 54	W N E	3 3	Squally · · · ·
	6	65					
21	8	68					
	3	70	43 23	21 7	N W	3	Cloudy
	6	68					
22	8	66	44 37	17 59	N W	4	Rainy · ·
	6	64					
23	8	62	45 57	14 38	NWbN	4	Squally thick weather
	6	63					
24	8	63	47 24	12 15	N N W		Squally, cold at night
	6	61					
25	8	62	48 38	10 48	N W	2	Cloudy, very cold at n.
	6	62					
26	8	60	48 10	9 30	S S E	2	Hazy and ſqually
	6	62					
27	8	64	48 36	6 19	E	2	Hazy and raw weather
	6	63					
28	8	64	49 12	2 34	S W	4	Cloudy and thick
	6	63					
29	8	65	49 21		S W	2	Cloudy, at night thick
	6	63			S W	3	and hazy
30	8	65			S W	3	Hazy & thick weathe
31	8	65	Iſle of Wight		W	3	Hazy
	6	64					

PART II.

Practical Obſervations on the Diſeaſes of the Eaſt Indies.

CHAP. I.

HAVING, in the former part, given a general account of the prevalent diſeaſes in voyages to the Eaſt Indies, and in different places in that part of the world, I ſhall now proceed to divide them into their proper claſſes, and to offer ſome practical obſervations on each diſtemper.

The diſeaſes which appear on the firſt embarkation, when voyages are undertaken in the winter or ſpring ſeaſon, are colds, ſore throats, pleuriſies, and other fevers, with topical inflammation. Theſe being the prevailing winter complaints of Great Britain, are purpoſely omitted.

SECT. I.

General Division of the Diseases in the East Indies.

IN laying down the division of the diseases, for the sake of greater perspicuity I shall first consider those which usually occur at sea, and are no way affected by land exhalations, and then enumerate the more fatal epidemics of warm and unhealthy situations.

The diseases to be met with in the longest voyages to the East Indies are few, and invariably the same, and may be considered under the following heads :

1st, Such diseases as are occasioned by heat.

2d, Such as are occasioned by heat and moisture.

3d, Such as are the consequence of cold and moisture.

At sea, the diseases which are occasioned merely by heat are few and very inconsiderable. If the voyage is favourable, and there are no long continued calms,

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the crew generally enjoy a good ſtate of health, and are never afflicted with dangerous diſeaſes. The common effects which immoderate heat has upon the conſtitution, are, relaxation of the ſyſtem, rarefaction of the fluids, and a more liberal ſecretion of bile; hence loſs of appetite, nauſea, head-ach, acceleration of pulſe, and ſlight ardent fevers, admitting of an eaſy cure. Therefore heat alone may be rather conſidered as a remote prediſpoſing cauſe of ſickneſs, which will unavoidably happen when ſucceeded by a humid and ſtagnant atmoſphere.

The diſeaſes occaſioned by heat and moiſture are remitting fevers or putrid continuals, which I have generally met with between the tropics, and particularly in the latitudes near the equator, where the air is commonly in a moiſt and hazy ſtate, and where, on account of frequent calms, there are noxious exhalations from the ocean. As the voyage is protracted, theſe fevers aſſume a worſe diſpoſition, and even after the arrival of ſeamen in healthy harbours, a greater putrefaction

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in the fluids is indicated by gripes, tenesmus, and other dysenteric symptoms.

The most common disease at sea, arising from cold and moisture, is the scurvy, which seldom or never appears in voyages to the East Indies, till the ships have arrived in the stormy latitudes off the Cape of Good Hope. If the weather is dry, and the passage quick into more temperate latitudes, but particularly if the seamen have had sufficient refreshment before they undertook the voyage, the disease is seldom to be seen, or, if it does make its appearance, is not mortal. On the contrary, when ships are long detained by unfavourable winds, in cold and stormy weather, especially when seas continually wash the deck, the situation of the common sailor is then truly deplorable; for, when upon duty, he is wet and fatigued; and when it is his turn to go below, he has no place to retire to, but a dirty birth or a wet hammock, where he must breathe a polluted air. These circumstances never fail to produce the scurvy; the men begin to fall down daily; and at last

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even the officers, who live better, who have dry clothes and apartments, are affected, and suffer more or less by the disease. I am well aware, that we meet with instances of the scurvy breaking out in warm climates, which happened to lord Anson's squadron, after leaving the coast of Mexico; but in this case it is to be remembered that they had suffered much by the disease before, and might therefore the more easily relapse, altho' they lived upon fresh diet, and kept the ship well aired and clean; besides, we have some reason to conclude, from the account given of the disease by the ingenious compiler of that voyage, that it was combined with a putrid fever. I would not, however, seem to infer that such rainy weather as happened at that time will never produce the scurvy in warm climates; but instances of it are seldom to be met with; and it may be affirmed in general, that putrid fevers are the consequence of heat and moisture; and that the scurvy, a disease of a very putrid nature, yet quite opposite to a fever, is the consequence of cold and moisture.

I come now to consider the most frequent land diseases in the East Indies, which cannot be so properly divided into acute and chronic as into the diseases of the dry, and those of the wet season.

The prevailing diseases of the dry season are fluxes from acrid bile, the colera, dry belly-ach, inflammations and obstructions of the liver. These are the complaints of the dry months on the coast of Malabar and Coromandel; and even at Bengal and other marshy countries, the fevers which precede the rains are seldom of a deleterious nature.

The diseases of the wet season are fevers and fluxes, which are malignant in proportion to the heat and humidity of the air, and to the noxious exhalations from marshes and uncultivated tracts of country; as they only differ in degree, they may be all referred to the same class; for to characterise them by difference of place would be endless, unnecessary, and perplexing.

Thus far having classed the diseases depending upon the weather or the seasons, it

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will appear that the moſt deſtructive diſeaſes in the Eaſt Indies are the fever, colera, dry belly-ach, dyſentery, hepatitis; and at ſea, from unavoidable circumſtances, the ſcurvy. Theſe ſhall be treated of in their proper places.

But as fevers are the moſt frequent and common of all diſeaſes, it remains to conſider, in a curſory way, the uſual denominations by which they have been diſtinguiſhed, and to refer the fever, which is the ſubject of our preſent enquiry, to its proper claſs.

SECT. II.

Of the Diviſion of Fevers.

THE moſt ſimple and leaſt confuſed diviſion of fevers is into intermitting, remitting, and continual. Theſe are real diſtinctions in nature, and are all that have been made by Hippocrates * and Celſus †.

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* Ex Febribus autem aliæ ſic deſinunt, ut ex toto ſequatur integritas, antequam altera acceſſio incipiat.

As intermitting and remitting fevers depend upon the ſame cauſe, eaſily change into one another, and can only be removed by the ſame medicines, no juſt and preciſe limits have been fixed to the two claſſes by medical writers; and for

incipiat. Intermittentes ideo dictæ ſunt; quarum alia quotidiana, alia tertiana, alia quartana eſt; ex his aliæ componuntur; aliæ admodum incertis horis repetunt; quædam ſed rariùs longiori intervallo, ut quintanæ, &c. redeunt.

Aliæ vero Febres aliquantulum quidem minuuntur, ſed inhærent tamen, donec novus motus fiat; aliæ vix quicquam, aut nil remittunt; utraſque Febres continuas, appellat Hippocrates, poſteriores in continuas & continentes diviſerunt.

Diſtinguuntur etiam ex accidente quodam inſigniori concomitante; ut alia ſit ardens, alia ſingultiens, alia λειπυρία, alia ασσῶδης & innumera ſanè nomina, hac ratione, Febribus impoſita ſunt. De nominibus vero non admodum ſollicitus erat medicinæ parens; et Cnidiis quidem vitio dat, quòd paſſionum nominibus nimis inhæſerint; ipſe autem animum ad vehementiam Febris, vires ægrotantis, et inclinationem morbi præ ceteris attendebat.—Th. Glaſs Comment. de Febribus, ad Hipp. Diſciplinam accommodati, pag. 3. Lond.

† Vide Corn. Celſi Medicina, de Febrium Generibus.

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this reaſon many authors have referred every ſpecies of remitting fevers to the claſs of intermittents, of which a tertian ſeems to be the moſt conſtant form. All other changes, whether quotidian, double tertian, quartan, &c. are only to be conſidered as different modifications of this general type. The tertian fever, when taken in this extenſive ſenſe, is the prevailing epidemic of all warm climates; nor, from the earlieſt ages of phyſic down to the preſent times, do we meet with a deſcription of a fever raging univerſally in any country, which may not be referred to this tribe.

But as tertians aſſume ſuch various forms, and are too anomalous, both in their remiſſions and acceſſions to admit of ſuch regular diviſions as are uſually made; all minute diſtinctions are laid aſide in a diſeaſe, which, though different with reſpect to periodical intervals, is eſſentially the ſame; and all interrupted fevers are conſidered under the more general heads of remitting and intermitting.

An intermitting fever or ague leaves the patient free from every ſymptom of

fever, and, after the lucid interval, returns with rigors, bringing on another paroxysm, which terminates as the former. Under this head are only comprehended regular intermittents, whether quotidian, tertian, or quartan.

A remitting fever is supposed to have remissions and exacerbations, which in some are very distinct and evident; in others, there is only a mitigation of the symptoms, the fever still remaining till another accession is brought on without any rigors. Such fevers are the prevailing epidemics of all hot climates, and only differ from intermittents in the intervals being less distinct, and in the paroxysms not being preceded by rigors. Under this head are comprehended every species of tertian, however irregular.

A continued fever * is supposed to run

* Continual fevers, by many practical writers, have been divided into three classes, the inflammatory, the nervous, and the putrid or malignant. The first is the concomitant of inflammation in any membranous part of the body; the other two denominations are of little consequence, as the cure in both is exactly the same.

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on without any ſenſible remiſſions, and in this ſenſe it may be conſidered as one paroxyſm, till the diſeaſe terminates in recovery or death. But in the moſt continued which I ever met with, although no diſtinct remiſſions have happened, yet I have always obſerved ſome alleviations, and exacerbations, and, in general, all fevers are aggravated towards night; ſo that we may ſafely conclude, it is the nature of every fever to remit, if it is not accompanied with local inflammation. In warm climates at leaſt, the frequent changes of remitting, intermitting, and continued fevers into one another, ſhew them to be of the ſame nature; and, in my opinion, the circumſtance of their intermitting, remitting, or being more continual, is merely accidental, depending upon the difference of conſtitution and place, but particularly upon the ſtate of the atmoſphere. Thus, we generally obſerve, when a fever breaks out in a ſultry and dry ſtate of the air, it aſſumes a continued form; when the air is moiſt and ſuffocating, but particularly when

filled with land exhalations, it appears in the form of a putrid remittent; and when the weather becomes moderately cool, pure, and temperate, it does not in the least differ from a regular intermittent.

The division of fevers into inflammatory and putrid seems to be of more consequence, as these too classes require very different methods of cure. It is the putrid disposition which alone prevails in all the fevers of hot climates, whether of a remitting, or of a more continued form.

By the term putrid, when applied to fevers, we mean, that evident symptoms of putrefaction have taken place, such as fœtid breath, hæmorrhage, offensive stools, livid blotches, and great prostration of strength.

The term ardent, when applied to fevers, is retained in the sense used by the ancients, and is to be considered as a fever of a few days standing, accompanied with nausea, great heat, thirst, and bilious vomiting.

CHAP. II.

Of the Remitting Fever.

SECT. I.

Description of the Disease.

THE remitting fever may occur at any time in hot climates, but seldom rages epidemically, unless in close, moist, and sultry weather. In treating of this disease, I shall first give a history of its symptoms, as it it appears at sea, when it is not affected by exhalations from the land.

The fever generally attacks with lassitude, rigors, sometimes only with a chilness, pains of the back and bones. These symptoms are succeeded by sickness at stomach, great heat, thirst, and pains above the eye-brows. The pulse, though soft, becomes very quick and full, the countenance is flushed, the head aches violently, the patient is troubled with great restlessness, anxiety, and oppression, and in the height of the paroxysm vomits

abundance of bile. The crisis of the fit is generally by sweat, and the patient enjoys a short lucid interval, during which the pulse seldom returns to its natural state, and almost all complain of a bitter taste in the mouth, giddiness, head-ach, and prostration of strength. In a few hours, the feverish accession returns, which is only known by an aggravation of all the symptoms, and is carried off by a sweat, as the former paroxysm; or sometimes by an evacuation of bile.

If the disease is neglected, the remissions grow more indistinct, and, sooner or later, it acquires a continued form, accompanied with many of the following symptoms: the tongue, which before was only white and furred, becomes dry and black; the teeth and lips are covered with a tenacious slime, and sometimes apthæ appear in the mouth and throat. The heat, head-ach, and inquietude are greater; the eyes either become dull and heavy, or wild and staring, and the patient falls into a coma, or dilirium, attended with tremors and subsultus tendi-

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num. As the ſtrength ſinks, the pulſe becomes very ſmall and fluttering, and the heat of the ſkin is changed into a cold clammy moiſture. If there have been no ſymptoms of putrefaction before this, they now appear; theſe ſymptoms, however, do not always take place; for I have ſeen the patient carried off without any evident marks of diſſolution in the blood, even when the diſeaſe has continued ſeveral weeks.

Sometimes, inſtead of the paroxyſms already mentioned, the patient, at firſt, was only indiſpoſed with giddineſs, head-ach, and low ſpirits, and although ſtill able to go about, was always worſe at night. When the attack was in this form, I have generally obſerved the fever in its courſe to be attended with greater danger, leſs diſtinct remiſſions, and more evident ſymptoms of putrefaction.

Theſe are the common characteriſtic ſymptoms of the fever, both at ſea and in favourable land ſituations. In low, woody, and unperflated countries, where, beſides intenſe heat, there is likewiſe

great moiſture, but eſpecially if there are noxious effluvia from marſhes or ſtagnant waters, the diſeaſe is more rapid, univerſal, and fatal. As an inſtance of the moſt malignant and putrid fever which I have ever ſeen in any part of the Eaſt Indies, I ſhall here give a deſcription of the marſh fever which raged at Bengal in the year 1768.

This fever attacked in various ways, but commonly began with rigors, pain and ſickneſs at ſtomach, head-ach; oppreſſion on the præcordia, and great dejection of ſpirits. Sometimes, without any previous indiſpoſition, the patients fell down in a deliquium, during the continuance of which the countenance was very pale and gloomy. As they began to recover from the fit, they expreſſed the pain they ſuffered by applying their hands to the ſtomach or head; and, after vomiting a conſiderable quantity of bile, they ſoon returned to their ſenſes. Sometimes the attack was ſo ſudden, and attended with ſuch excruciating pain at ſtomach, and ſo great a degree of timidity and

and faintneſs, that I have been obliged to give an opiate immediately.

In whatever form the diſeaſe appeared at firſt, the pulſe was ſmall, feeble, and quick, the pain of the ſtomach increaſed, and the vomiting continued. As the paroxyſm advanced, the countenance became fluſhed, and the pulſe very quick and full. The eyes were red, the tongue furred, the thirſt intenſe, and the head-ach exceedingly violent. A continuance of theſe ſymptoms ſoon brought on a delirium, in which the patients were very unmanageable; but a profuſe ſweat breaking out in twelve or thirteen hours generally mitigated all the ſymptoms.

In the remiſſions, the pulſe, which before was frequently 130, fell to 90, the patient returned to his ſenſes, but complained of great debility, ſickneſs at ſtomach, and a bitter taſte in the mouth. This interval, which was very ſhort, was ſucceeded by another paroxyſm, in which all the former ſymptoms were much aggravated, particularly the thirſt, delirium, pain at the ſtomach, and vomiting of

bile. The breath and ſweats, even ſo early as this, began to be offenſive.

If the diſeaſe was neglected in the beginning, the remiſſions now totally diſappeared, and the ſkin became moiſt and clammy. The pulſe was ſmall and irregular, the tongue more black and cruſted, and the pain at the ſtomach and vomiting of bile became more violent.

When matters were arrived to this paſs, all the excretions, but eſpecially the ſtools, were very offenſive, and ran off involuntarily; and the patients now, inſtead of being highly delirious, laboured under a coma, with interrupted ravings. Subſultus tendinum, tremors, and hiccup were added, the extremities grew cold, and were covered with livid vebices, and the body, for ſeveral hours before death, very frequently emitted a cadaverous ſmell.

The appearance of the urine, in fevers of warm climates, is not much to be depended upon; in the beginning of the paroxyſm, it is pale; at the height, of a higher colour, but ſeldom or never depoſites any ſediment.

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If the fever was neglected at firſt, it generally proved fatal betwixt the third and ſeventh day; in ſome caſes, indeed, where the exacerbations were not ſo ſevere, I have ſeen it protracted to the 15th, and ſometimes even to the 20th *.

The fever, however ſhort time it continued, brought the patient ſo very low, that it was ſome weeks before he recovered the leaſt degree of ſtrength. It did not, indeed, carry off any of the patients under my care, except one who refuſed taking the bark, another who went overboard, in a delirium, during the firſt paroxyſm, and ſuch as were too far gone before I viſited

* I was informed by a ſurgeon, who reſided at Calcutta, that there were many inſtances of the patient's being carried off, highly delirious, in the firſt fit, but that he ſtill loſt more in the third paroxyſm. His practice was to exhibit an emetic at firſt, and afterwards, he endeavoured to bring the fever to remit by antimonials and ſaline draughts. Here the firſt paroxyſm ſeems to have been too rapid to admit of a cure by the moſt powerful medicines; but the danger from the third might certainly have been obviated by an early exhibition of the bark.

ſited them. A relapſe, which brought on diſeaſes of the liver, and the dyſentery, which raged at the ſame time, and frequently attacked them in the convaleſcent ſtate, proved more fatal.

Thus I have given a deſcription of the remitting fever, drawn from a variety of caſes which came under my obſervation in different parts of the Eaſt Indies; and both from my own experience, and from the information I have received from others, concerning this fever, I am convinced that it is every where the ſame, and requires the ſame treatment. The marſh fever at Bengal, of which a ſeparate hiſtory has been given, differs from the reſt only in being more univerſal and more malignant; yet the remitting fever of more favourable ſituations are ſometimes attended with as putrid and dangerous ſymptoms. This will appear more fully in the ſequel, when the particular caſes are conſidered.

Moiſt damp weather, after long continued heats, has been juſtly reckoned the occaſional cauſe of remitting fevers in all countries; and noxious exhalations from

marſhes and uncultivated tracts of ground, never fail to render it more fatal and epidemic. Beſides theſe general external cauſes, I ſhall mention ſome others, which ſeem to have a very powerful influence on the diſeaſe, and render it more fatal. Theſe are principally too great inanition, too great repletion from a diet of animal food, the affections of the mind, and contagion.

The two firſt are ſuch evident cauſes of ſickneſs that none can doubt their powerful influence; nor does it eſcape the eyes of the moſt common obſerver at Bengal, that thoſe who have been much reduced by evacuations, particularly by mercury, and great eaters of animal food, are more liable to the ſickneſs of the ſeaſon than the hale and temperate; and, when ſeized, have a much worſe chance to recover. Seamen alſo, from a very improper diet of animal food, and the total want of vegetables, are more ſubject than others to diſeaſes, upon their arrival at unhealthy ports.

Diſappointment and the dejecting paſſions of the mind are very powerful pre-

predifpofing caufes. It is owing to this, that the difeafes of the feafon are fo very fatal to many young adventurers, who annually emigrate in expectation of acquiring fudden riches. Upon their arrival, finding all their airy dreams fuddenly diffipated, they become low fpirited, and are carried off as it were in an inftant; whereas others, as little inured to the climate, but who have better profpects, are by no means fo liable to ficknefs, and when attacked, the difeafes are not of fuch a dangerous nature. But of all the affections of the mind none are attended with fuch powerful and fudden effects as apprehenfion and pannic; for, I have obferved, when a dangerous fever has appeared on board fhip, that the alarm has occafioned inftant ficknefs. It is, perhaps, eafier upon this than any other principle to account for the fudden deaths* which frequently happen to thofe who have been attending the funeral of a deceafed friend; for if the ficknefs, as one may be apt to imagine, was occafioned by

* Vide Part I. page 53.

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the exhalations from the marſhy burial-grounds, or putrid miaſmata from the water, which iſſue from the adjoining graves, the grave-diggers would be more ſubject to be attacked than the attendants on the funerals. This, however, is not the caſe; for it generally happens that the timorous and humane ſuffer, while the hard-hearted and callous eſcape. I ſhall now proceed to conſider another and more powerful cauſe of the putrid remitting fever.

This fever in hot climates at firſt ſeems to be infectious only from the conſtitution of the air; but afterwards, during the continuance and rage of ſickneſs, there is no reaſon to doubt a worſe kind of contagion from the putrid effluvia of the ſick. This was very evident in the marſh fever at Bengal. At firſt, only two or three of our people were affected, who had been employed in hard duty upon deck; but in a fortnight, the fever and flux were ſo univerſal, that we had few people capable of doing duty; nor did any eſcape except the officers and quarter-maſters, who had no communi-

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cation with the ſick, and the cooks who worked in the galley amongſt the ſmoke. Whilſt this was the caſe on board of us, the Dutton was burying her people every day; and, at the ſame time, the Saliſbury and Queen, other two of the company's ſhips, although at no great diſtance, and anchored nearer the ſhore, enjoyed almoſt a total immunity from ſickneſs. Another inſtance, which plainly ſhews the power of contagion, was the great mortality amongſt the viſitors and attendants upon the ſick. Nor was the fever leſs infectious at Calcutta, where the patients lay in large rooms; the putrefactive ſymptoms ſtill ran as high; and merely from being, for a ſhort time, in the apartments of the ſick, I have often experienced all the ſymptoms of an attack, and ſuffered much from ſickneſs, although not naturally addicted to fevers, and uſing every method of prevention.

Diſſections throw no light into the proximate cauſe of the diſeaſe, as they only ſhew its effects. Its ſeat appears to be at firſt in the ſtomach and duodenum,

and a great ſecretion of acrid bile, whether the cauſe or effect of the diſeaſe, ſeems to render it worſe. The head-ach and delirium only appear to be ſymptomatic, and not to depend on inflammation. Imagining it enough for the indication of cure, to know the occaſional cauſes of the diſeaſe, I ſhall frame no hypotheſis concerning its proximate cauſe, the beſt of which are only mere conjecture, and ſubject to many objections. I ſhall therefore proceed to make ſome obſervations on the medicines commonly preſcribed in this fever.

S E C T. II.

Obſervations on particular Remedies.

I. ALTHOUGH the genus of this fever does not ſeem to require bleeding, yet it has been recommended univerſally by all practitioners, with a view to remove plethora, to reduce the fever, and bring it to regular remiſſions. In cold and temperate

perate climates, this evacuation may sometimes have a good effect; at least, taking away some blood in the beginning of any fever can be attended with no great danger. It may likewise be used upon first entering into warm weather, when many of the fevers are so mild as to require almost no other cure than to cleanse the primæ viæ, and to produce an equable perspiration by relaxants: but after a short continuance in a warm climate, this evacuation is very detrimental. I have been frequently induced to try it, when it seemed to be strongly indicated by great drought, head-ach, flushed countenance, and oppressed pulse; but I seldom ever saw it answer any good purpose.

Encouraged by the similarity of the Bengal fever to that of the marshes described by sir John Pringle, without paying any regard to the difference of climate, I thought the violence of the fever required at least one blooding; and finding the same evacuation recommended by Dr. Huck and Cleghorn, I was induced to open a vein during the first paroxysm in

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three of our patients at Culpee. The conſequence was, the firſt did not bear the evacuation, his pulſe flagged, and he was very delirious in the enſuing fit, the remiſſions were very inſenſible, and the exacerbations were only to be known by his delirium. The other two were ſeized very ſuddenly, and fell down in a deliquium; on opening a vein, they returned to their ſenſes; but before five or ſix ounces of blood were taken, they became faint, and the feveriſh paroxyſm ran higher than in thoſe who did not ſuffer the evacuation. For the future I was determined to be very cautious in bloodletting; and, ſince that period, have laid it aſide in every fever in warm climates, both at ſea and on ſhore, unleſs accompanied with topical inflammation.

II. I have given antimonials in various preparations, but prefer emetic tartar to all others. At firſt, carefully avoiding every addition which might decompoſe the acid, it was exhibited diſſolved in pure water. As I found a powder more convenient for common uſe, it was rubbed

with five parts of ſugar, to make it more diviſible. This preparation, though ever ſo carefully corked, after keeping, turned moiſt and cruſted; the ſugar was therefore changed for the ſame quantity of magneſia; nor, by this means, did I obſerve the emetic tartar in the leaſt robbed of any of its virtues, which one might expect from the addition of the abſorbent. However, if, after exhibiting a few doſes of this medicine, its operation does not proceed to our wiſhes, drinking acidulated liquors will not only render this preparation, but almoſt every other antimonial, more active.

Sometimes I have given Dr. James's powder; but, from what I have ſeen, muſt obſerve, that it is a much more uncertain antimonial than emetic tartar, frequently lying inert in the ſtomach and bowels for ſeveral hours, and afterwards operating with great violence. Even when it ſucceeds to our wiſhes, its effects are exactly ſimilar to thoſe of emetic tartar, which laſt ought certainly to be preferred to a remedy, the preparation of which we are perfectly ignorant of; and, indeed, the

only advantage which this famed powder has above the other, is its being kept a ſecret, and ſold at the enormous price of half a crown the doſe. It is, however, ſtill ſent out, with directions, to hot climates. When in proper hands, I ſhall not preſume to ſay that it is an uſeleſs medicine; but when given indiſcriminately, and continued for any length of time, I am certain that this fever-powder too often proves fatal. The long-continued uſe of it can only be proper in inflammatory fevers of cold climates; but the profuſe evacuations, particularly the profuſe ſweats which it occaſions, renders it highly injurious in the putrid fevers of hot climates.

Emetic tartar, when given in ſmall doſes, is ſuppoſed to be poſſeſſed of highly febrifuge virtues. This, in ſome meaſure, appears to be literally true, as we often ſee a remiſſion enſue after its uſe, which, I imagine, happens in the following manner. During its operation, it occaſions a ſtrong artificial paroxyſm, which at laſt is carried off by a profuſe ſweat,

although the original diſeaſe may ſtill continue, and in a few hours be as much exaſperated as ever. Its febrifuge virtues, in hot climates, ſeems principally, if not altogether, to depend upon its evacuating powers, and its cauſing a derivation to the ſkin, which ſometimes removes a fever juſt in the ſame way as the timely exhibition of a puke and ſweat. But when once the fever is confirmed, I have often given emetic tartar, without obſerving it poſſeſſed of any virtues either to remove it, or bring it to more regular remiſſions. When the diſeaſe has arrived to any degree of malignity, ſuch a ſtimulating relaxant is very hurtful.

III. The ſaline draughts of Riverius are generally preſcribed, with a view to dilute the bile, to cauſe a diaphoreſis, and to bring the fever to more regular remiſſions; but, as moſt fevers have this diſpoſition, what is merely the nature of the diſeaſe has been imputed to the effects of the medicine. When given in an effervеſcent ſtate, they will ſometimes ſtay a vomiting, and remove an urgent ſymp-

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tom; but when exhibited alone, the highest character which can be given of them is, that they are very inoffensive, but possessed of no virtues, either to cure a fever, or to bring it to more regular remissions. The other remedies, which have been tried with the same intention, are spiritus Mindereri and nitre. Whole pints of the first have been given, without producing any sensible effect; and as for nitre, if the fevers of warm climates demand the use of it, the stomach of the patient will not bear it in sufficient doses to answer any good purpose; and, indeed, the prescribing of such remedies can only be accounted a specious pretext of doing something. When no other remedies are necessary, they are much surpassed by lemonade, and barley or rice-water accidulated, the usual drinks and diluents of the patient.

IV. Amongst the class of cordial and alexipharmic medicines, I have tried camphor, serpentaria, musk, castor, sal succini, sal cornu cervi, and the pulvis contrayervæ. The first was commonly pre-

ſcribed in the form of the julepum camphoratum of the London Diſpenſatory, with a view to cauſe a diaphoreſis to relieve the head, or to abate ſome urgent ſymptom, but very ſeldom with any remarkable ſucceſs. In whatever way camphor is preſcribed, it is a very nauſeous medicine, and, in hot climates, will never ſit, in ſufficient doſes, upon the patient's ſtomach. The ſerpentaria was moſt commonly given in the form of decoction, with a little theriac; it ſeemed to anſwer better than moſt medicines of this claſs, and was attended with conſiderable advantage in the decline of fevers, when accompanied with a profuſe diarrhœa: however, the ſame intentions may be anſwered by much more agreeable medicines; for this reaſon, even at firſt, I never put much ſtreſs upon it, and, in my later practice, have laid it entirely aſide. I do not recollect a ſingle inſtance of the good effects of any of the reſt, except muſk and the ſal cornu cervi. The firſt, if given to the quantity of a ſcruple every four hours, ſeldom fails to abate

hiccup

hiccup and other nervous ſymptoms, and it likewiſe acts as a powerful cordial and diaphoretic. The latter was only preſcribed in low caſes as a ſtimulus, and therefore was never long continued. In ſhort, little dependence is to be put upon moſt medicines of this claſs. If they are preſcribed with a view to relieve the head, they are much ſurpaſſed by bliſters; wine anſwers, the purpoſe much better as a cordial; and warm fomentations, or pediluvia, as antiſpaſmodics and diaphoretics.

SECT. III.

The Cure of the Diſeaſe.

HAVING made ſome obſervations on the uſual medicines preſcribed in this fever, I ſhall now proceed to lay down the method of cure, which, in the courſe of my practice, I have found moſt effectual.

I. Nothing is more indiſpenſibly neceſſary, in the beginning of this fever, than to cleanſe the inteſtinal tube by gen-

tle vomits and purges. Nature ſeems always to indicate ſuch evacuations by the plentiful ſecretion of bile, which, if not ſpeedily diſcharged, often brings on an inflammation of the ſtomach, nauſea, and hiccup, preventing, in the courſe of the diſeaſe, the effects of the moſt powerful medicines.

When the fever attacked ſlowly, or when I was called in the remiſſions, I found it the beſt courſe to give a vomit of ipecacoanha, with a few grains of emetic tartar. If this did not move the belly, next day a doſe of neutral purging ſalts was preſcribed.

But, in dangerous fevers, which rage epidemically, no time is to be loſt; therefore this method of evacuation is too tedious. In ſuch caſes, I have always truſted to emetic tartar, given to the quantity of a quarter or half a grain every hour, till it acted by vomit and ſtool, which laſt intention is rendered more certain by the addition of manna, decoctum tamarindorum, or a ſmall portion of ſal catharticus. Any of theſe medicines ought

ought to be given immediately after the rigors, as they not only mitigate the feverish paroxyſm, but bring it to a quicker ſolution. But it is proper to obſerve, that evacuations of this kind are not to be long continued; for it will be in vain to expect by this means to prevent a generation of bile; for ſo long as the feveriſh indiſpoſition continues, although an emetic and cathartic were repeated every day, more ſordes will ſtill be generated; but as ſoon as the fever, which is the cauſe, is removed, the effect of conſequence will ceaſe.

II. As ſoon as the inteſtinal tube has been thoroughly cleanſed, the principal part of the cure conſiſts in preſcribing the Peruvian bark in as large doſes as the patient's ſtomach will bear, without paying any regard to the febrile remiſſions and exacerbations. If the remiſſions are diſtinct, the bark will have a more ſpeedy effect; but even although the diſeaſe is continued, by its uſe, it is as effectually prevented from growing dangerous and malignant. The bark being antiſceptic,

ſceptic, cordial, and never ſuppreſſing any critical ſecretion, is well adapted for the cure of fevers in hot climates. When the ſtomach is weak, it ought to be given in decoction; but, as ſoon as the patient can digeſt it, immediate recourſe is to be had to the powder, either in the ſaline draught, port, or in any other form moſt agreeable.

If, after evacuations, the ſtomach remains weak and ſqueamiſh, which is often the caſe in bad fevers, I have often found the greateſt advantage from preſcribing a full doſe of ſolid opium. It ſeldom fails to remove theſe ſymptoms, and then the bark will ſit eaſy on almoſt every ſtomach. On the contrary, if the diſeaſe is allowed to go on, the diſorder at the ſtomach will encreaſe, and other ſymptoms ſupervene, which will render the effect of every medicine very precarious.

The moſt certain effects of the bark are a gentle equable ſweat and a looſe ſtool. If it does not produce this effect, and eſpecially if the ſymptoms indicate bilious redundancies in the primæ viæ, laxatives ought

ought to be joined with it; but if it runs off by ſtool, it is indiſpenſably neceſſary to check the evacuation by a few drops of laudanum in each doſe.

Although the many frivolous arguments which long prevailed againſt the uſe of the bark are now obviated by the united conſent of the ableſt phyſicians, yet there ſtill remains one great prejudice, which prevents its more general exhibition. When a fever has diſtinct remiſſions, few phyſicians will ſcruple to preſcribe it; but if the diſeaſe aſſume a continued form, every method is tried to bring on regular remiſſions; if this cannot be accompliſhed, and the patient's ſtrength begins to ſink, alexipharmics, bliſters, and cordials are employed to ſupport him. The uſe of the bark, at that time, would be thought highly dangerous, and has therefore been cautiouſly prohibited by almoſt every medical writer ſince the days of Sydenham. But, in hot climates, experience affords ſufficient proof, that this objection has no manner of foundation, and that the bark may not only

only be given with the greatest safety both in the remissions and exacerbations, but even when the disease is continual.

III. The diet ought to be of the most antisceptic kind. Ripe fruit answers very well both the intention of food and medicine. The panada, sago, and other diet on board ship should be acidulated, or the drink may be rendered agreeably tart by cremor tartari or elixir of vitriol. If the patient's strength begins to sink, he should be freely supported with wine in his drink, food, and medicines; the patient should be frequently shifted, and his apartment sprinkled with vinegar, and kept as cool and clean as possible. When he longs for cold water, which is frequently the case, it may be allowed him freely, as it will be found the best diluent. Nothing, indeed, in acute diseases, can be more cruel than to refuse a patient the gratification of his strong cravings. Very happy effects often follow from indulging them; and if what is longed for be very improper, there will never be so much of it taken as to do any harm,

harm. On board of ſhip, porter, punch, cheeſe, and ham are moſt frequently deſired by the ſick in fevers, and, however improper they may appear, I have ſometimes ſeen an allowance of them produce the beſt effects.

IV. As all the dangerous diſeaſes of hot climates, particularly fevers, depend upon a putreſcent diſpoſition in the fluids, the diet at all times, but more eſpecially during the rage of ſickneſs, ought to correct this tendency; for this reaſon, vegetables ſhould bear the greateſt proportion. Violent exerciſe, expoſition to the heat of the ſun and night-dews, are to be carefully avoided; for they are ſuch evident cauſes of ſickneſs in hot climates, that it is very extraordinary, if any eſcape a dangerous attack who are expoſed to them.

Beſides theſe neceſſary cautions, keeping the ſtomach clean, a generous uſe of wine, and taking the bark daily during the ſickly ſeaſon, are the beſt preſervatives.

If ſuch directions were obſerved, it may with certainty be affirmed, that the

lives of many Europeans would be ſaved, who are annually carried off by the diſeaſes of hot and unhealthy countries. But if, through a diſregard to regimen, or from being expoſed to contagion, the ſymptoms of fever ſhould be induced, the timely exhibition of a puke will oftentimes reſcue the patient from impending danger.

SECT. IV.

Caſes of the Remitting Fever.

IN the former ſections having given a deſcription of the remitting fever, made ſome obſervations on particular remedies, and laid down the principal indications of cure, I ſhall now illuſtrate the whole by the following caſes, which are ſelected from a number faithfully minuted on the ſpot, and are related nearly in the order they came under obſervation.

In the treatment it will appear, that little regard has been paid to private opinions or public ſyſtems; uninfluenced by any theory, however plauſible and inge-

nious, it was my conſtant aim carefully to obſerve the ſymptoms of diſeaſe, and the effects which medicines produced.

CASE I.

May 8th, 1768, lat. 13 deg. 29 min. S. Stephen Leven, one of the company's recruits, complained of a head-ach, pain and ſickneſs at ſtomach. His countenance was fluſhed, his ſkin very hot, and his pulſe quick and ſoft. Five grains of the antimonial powder, N°. 1, were given every hour, with plentiful dilution, which diſcharged much bile, and ſweated him profuſely; he was, however, very reſtleſs during the night.—9th. In the morning, his tongue was dry and parched, his ſkin hot, and his head-ach more violent. As he was coſtive, he had a doſe of ſalts, which purged him thrice. At night, his fever ſtill continued. One quarter of the antimonial powder was preſcribed.—10th. In the morning, his tongue was more foul, he was troubled with great inquietude, and his pulſe was 108 in a minute. The powder was continued every three or four

four hours, with two ſpoonfuls of the Mindereri julep; his medicines ſweated him, and at night he appeared to be eaſier, but ſoon became delirious.

In the morning of the 11th, his pulſe was 100, his tongue was covered with a brown dry cruſt, his countenance livid, and his ſkin very hot. His medicines were repeated every ſix hours, and a little white wine was allowed in his drink. At night his ſkin was ſtill very dry and hot, his pulſe was more accelerated, he had a ſlight ſtupor, and was again diſpoſed to rave. The pediluvium was uſed, a bliſter was applied betwixt his ſhoulders, ſpirit of nitre was added to his drink, and two ſpoonfuls of the camphorated julep preſcribed every four hours.—12th. He raved very much during the night, and his julep occaſioned a ſlight nauſea. In the morning his ſkin was hot, but clammy; his pulſe ſmall, quick, and feeble; and he was troubled with ſlight ſubſultus tendinum. Two ounces of the bark decoction, N°. 8, were preſcribed every hour, and he was allowed red port in his drink;

his

his medicines ſat eaſy on his ſtomach, but he had a very reſtleſs night.—In the morning of the 13th, he was very ſenſible, had a gentle moiſture on his ſkin, but his pulſe was very weak and feeble. Two ſcruples of bark in red wine were given every two hours, and toaſt and water, with a little port, was ordered for his drink. He took his medicine five times, in the evening his pulſe was more firm; and he had ſome reſt in the night.—14th. In the morning his pulſe beat 90; he was in equable diffuſed ſweat; but his tongue was ſtill rough and dry. At night, petechiæ appeared on his arms.—On the 15th and 16th, little or no alteration could be obſerved.—On the 17th, he was free from feveriſh ſymptoms; the petechiæ were gone; but he was very feeble and giddy. The bark and wine were continued for ſome time longer; however, it was ſeveral weeks before he recovered his uſual ſtrength.

Another of the recruits was ſeized with the fever, about the ſame time. On the third day, the bark was preſcribed, although

though no diſtinct remiſſions could be perceived, and he was ſoon reſtored to health.

CASE II.

May 28, 1768, lat. 34 deg. 47. min. S. Thomas Sparks, aged about twenty-ſix, of a ſtrong healthy conſtitution, and who had never before been in a warm climate, was ſeized with head-ach, alternate fluſhes of heat and cold, and pains in his back and limbs. Theſe ſymptoms were ſucceeded by drought, reſtleſſneſs, and oppreſſion; but his pulſe was very little accelerated. The following was given:

℞ Pulv. ipecac. gr. x.
Tart. emet. gr. ii. m.

This operated very well, and relieved him greatly. In the afternoon he went to bed, and was ſweated with warm ſage-tea, and ſpirit of hartſhorn.—29th. On the morning he found himſelf able to walk about; but he was ſtill feeble and oppreſſed, and complained much of head-ach. The bark was preſcribed; however, he went about drooping ſome days longer, and neglected

his medicine.—June 1. In the afternoon, he was ſeized with ſlight rigors, which were ſucceeded by heat and drought, and he had a very reſtleſs night.—2d. In the morning, when he ſent for me, he complained of very ſevere head-ach, his ſkin was exceedingly hot, his tongue parched, and his pulſe very ſmall and quick. Half the powder, N°. 1, was preſcribed every four hours, which operated well, and relieved him conſiderably. In the night, the powders purged him frequently, and he imprudently went out into the open air.—3d. In the morning, the feveriſh heat was greatly increaſed, and his head-ach was almoſt inſupportable; but his pulſe, though quick, was very ſmall. Powders, with camphor and nitre, were preſcribed, which only forced a partial ſweat; and in the night he became delirious.—4th. In the morning, his ſkin was intenſely hot, his eyes looked dull and heavy, his pulſe was very quick and feeble, and he had a conſiderable degree of ſtupor. His feet were bathed in warm water, bliſters were applied to the ancles,

 wine

wine was allowed in his drink, and two ſpoonfuls of the camphorated julep were preſcribed every two hours. At night, he was pretty ſenſible.—The 5th, no alteration. His medicines were continued, and the pediluvium uſed.—6th. The ſtupor and inſenſibility rather increaſed, and his pulſe flagged much. At night, his countenance was wild and ſtaring, and he was troubled with ſubſultus tendinum. A large bliſter was applied betwixt his ſhoulders, the camphorated julep was continued every four hours, and the following bolus was given at bed-time:

℞ Theriac. Venet.
Caſtor Ruſſ. aa gr. xv.
Sal ſuccin. gr. v.
Syr. ſimp. q. ſ. m.

He was delirious in the night. Towards the morning he had a partial ſweat.—7th. His tongue was very black and cruſted, the ſubſultus tendinum more frequent; he doſed much, and was inſenſible.—Two ounces of the decoct. ſerpent. Ph.Edin. were preſcribed every three hours, and wine was given freely.—8th and 9th, he con-

tinued his medicines; however, they occasioned no alteration.—On the 10th, the ſtupor and inſenſibility increaſed much, with picking at the bed-clothes. One of James's powders was given, and repeated a ſecond and third time, which only forced a clammy moiſture on his neck and temples. At night, his pulſe was very weak, and ſo quick that it could not be numbered. Sinapiſms were applied to his feet, and a ſpoonful of the cordial julep, N°. 8, was preſcribed frequently, as he could ſtill ſwallow.—The 11th, he lay comatoſe and ſenſeleſs, and was covered with cold clammy ſweats. The ſinapiſms were repeated, but had no effect in rouſing him.—12th. The ſubſultus tendinum and picking at the bed-clothes were more frequent, and he could ſwallow nothing but a little wine and water. Theſe ſymptoms increaſing, his extremities became cold, his pulſe failed, and he was carried off by convulſions in the afternoon of the 14th, without a ſingle ſymptom of putreſcency, or any evident marks of a diſſolved ſtate of the blood.

CASE III.

July 18th, lat. 14 deg. [illegible]0 min. N. Worthington Price, ſerjeant, never before ſubject to any diſeaſe, except an obſtinate ague, which he contracted by a ſhort reſidence in a fenny county of England, was ſeized at night with a feveriſh paroxyſm, which terminated in the morning by a profuſe ſweat.

Next day, when I firſt viſited him, he complained of wearineſs, head-ach, and low ſpirits; his tongue was white and foul, and his pulſe ſmall and feeble. An antimonial puke was exhibited, which operated well; but in the morning, the feveriſh paroxyſm returned. Two drams of antimonial wine, mixed in a pint of warm ſage-tea, were preſcribed at ſeparate draughts, which ſoon procured a plentiful ſweat.

On the morning of the 28th, he was free of fever, but complained of great proſtration of ſtrength, and was very much dejected. His ague being formerly removed by the Peruvian bark, and ſucceeded

ſucceded by obſtinate rheumatic pains, from prejudice, he refuſed taking any of this medicine; but ſaid he was willing to follow any other directions which might be judged proper; therefore, in order to diſguiſe the bark as much as poſſible, it was preſcribed in the following form:

℞ Aq. Menth. Sat. ℥viii.
Pulv. cort. Peruv. ʒvi.
Succ. limon.
Sp. vin. Gallic. a ℥i.
Sach. alb. ℥ſs. m.

Cap. unciam ſecunda quaque hora.

This ſat very eaſy upon his ſtomach; but in the night he had an acceſſion of fever. Next day his head-ach became more ſevere, and he complained of giddineſs when he attempted to walk; being unfortunately told, unleſs he took the bark more regularly, and in larger doſes, he could not expect to get ſoon better, he abſolutely refuſed taking any more medicine.

On the 24th, he was obliged to confine himſelf to his hammock. When I viſited him, he was very hot and feveriſh;

his tongue was dry and furred, and he was troubled with head-ach, anxiety, and oppreſſion. One half of the powder, N°. 1, was repeated every four hours, which operated well. At night he was in a profuſe ſweat, and his pulſe was more full and ſoft.

In the morning of the 25th, he had a pretty diſtinct remiſſion. Two ſcruples of bark were preſcribed in a ſaline draught; but when he diſcovered the medicine, he refuſed it. In the afternoon, the feveriſh paroxyſm returned; his feet were bathed in warm water, and the ſaline julep was preſcribed. He was delirious in the night.

The 26th, in the morning, he was ſenſible, but his ſkin continued hot and dry. Two ounces of the decoct. ſerpentariæ were preſcribed every three hours. In the night, he reſted well, and ſweated freely.

On the 27th, he continued calm and eaſy through the day, and took his decoction regularly, but could not be perſuaded to have recourſe to the bark. In the night, his fever returned; he was very de-

delirious, got out of his hammock, and ran upon deck.—28th. His pulſe was very quick, his ſkin intenſely hot, and the delirium remained. His feet were bathed, his head ſhaved, a bliſter applied betwixt his ſhoulders, and two ſpoonfuls of the camphorated julep, with ſp. Mindereri, were preſcribed every two hours.—29th. No alteration. Perg.—30th. He both comatoſe and delirious. His medicines only occaſioned a partial ſweat; bliſters were applied to his ancles, and wine was preſcribed freely. Perg.

The 31ſt, very little alteration. P.

Auguſt 1. The coma and delirium continued, his lips and teeth were covered with a glutinous cruſt, and his breath was very offenſive. A ſtrong decoction of bark was preſcribed, but was ſwallowed with difficulty. Sinapiſms were applied; and he was ſupported with wine. Next day, no alteration.

The 3d, large livid ſpots appeared on each foot, his pulſe was exceedingly quick and feeble, his countenance horribly ghaſtly, and his ſtools very offenſive.

The

The bark was tried in glyſters, but was not retained. The following days he lay ſtupid and inſenſible, continually muttering to himſelf, and picking at the bed-clothes. All medicines were laid aſide, yet he protracted a miſerable exiſtence to the 8th, when his body, ſoon after death, emitted a very cadaverous ſmell.

CASE IV.

July 23d, lat. 4 deg. 49 min. S. John Vickarie, one of the company's recruits, aged eighteen, in the evening, was ſeized with rigors, head-ach, and pains in his back and loins; he ſoon became hot and droughty, and paſſed a reſtleſs night.—24th. In the morning, when I firſt viſited him, his pulſe was 100, his countenance much fluſhed, his ſkin very hot, and his thirſt inſatiable; he complained of ſickneſs at ſtomach, and vomited much bile. A grain of tartar emetic was given at ſeparate draughts, which operated eaſily. At night, his fever returned with violence; all the former ſymptoms were aggravated, particularly the pain at the ſtomach and bilious vomiting. A grain of ſolid opium

was given, and a ſaline draught was preſcribed every two hours in the act of fermentation. He was troubled with the greateſt inquietude in the night, and his ſtomach rejected every thing he drank.

The 25th, in the morning, his fever continued, the nauſea and pain of his ſtomach were very ſevere, fomentations were applied, and the draughts repeated, which procured him ſome eaſe. At night, the feveriſh paroxyſm run very high, the pain of his ſtomach was almoſt inſupportable, with inceſſant vomiting of bile. The pediluvium was uſed, a cataplaſm with theriac, camphor, and three drams of laudanum, was applied to the ſtomach. Soon after this, the pain abated, and he ſlept for an hour. When he awaked, he called for cold water, which was allowed him in ſmall draughts. In the night, he was reſtleſs, drank plentifully, and fell into a ſweat towards the morning.

On the 26th, he had no diſtinct remiſſion, his ſkin continued hot, his countenance was gloomy, and his eyes were of a yel-

a yellow colour. Two ounces of the bark decoction were preſcribed every two hours, which ſat eaſy on his ſtomach. In the evening, he had a looſe ſtool, and the feveriſh heat encreaſed. His feet were bathed in warm water, wine was added to his lemonade, and his medicine was continued. In the night he was delirious, but became calm towards the morning.

The 27th, when I viſited him, a gentle moiſture was diffuſed over his ſkin, but his pulſe was ſmall and fluttering. His countenance was exceedingly ghaſtly, neither was he perfectly ſenſible. Two ſcruples of the bark were preſcribed every hour. In the afternoon his pulſe was better. As the bark had a tendency to run off by ſtool, laudanum was added.

On the 28th and 29th, his fever abated, and in three days more totally left him.

After this, he was ſeized with an excruciating pain in his right hip, which was removed by the application of a bliſter. He continued the uſe of the bark for ſome days longer, and ſoon recovered his uſual health and colour.

CASE V.

July, 1768, lat. 6 deg. 33 min. S. Mr. Grant, a cadet, aged about eighteen, for two or three days, had been indiſpoſed with a head-ach, want of appetite, and low ſpirits. On the morning of the 22d, he was ſeized with alternate fluſhes of heat and cold, and pains in his back and limbs. Theſe complaints were ſucceeded by head-ach, hot ſkin, and profuſe bleeding from the noſe. A doſe of cream of tartar and manna was preſcribed, which procured him two ſtools.

On the morning of the 23d, his ſkin was ſtill hot, his countenance pale, and his tongue foul and white; he had no conſiderable drought; and his pulſe was ſmall, but ſcarcely quick. The following was preſcribed every three hours:

℞ Decoct. cort. Peruv. ℥ii.
Sp. vitriol. ten. gutt. x.

On the 24th, he complained much of head-ach, giddineſs, and oppreſſion; his tongue was very dry, his ſkin hot, and his pulſe 100. His medicine was continued,

nued, and lemonade with wine was preſcribed for his ordinary drink. At night, the inquietude was greater; his feet were bathed in warm water.

The 25th, in the forenoon, he was again attacked with the hæmorrhage from the noſe, which was ſoon ſtopped. The blood was very thin, and ſcarcely tinged the cloth. His pulſe became more quick and feeble, and he was very dejected. As he had an averſion to the bark in ſubſtance, the draughts were continued as before.

26th. The ſame, only his tongue was more foul, and his teeth cruſted. P.

27th. No alteration. P.

28th. Towards night, he was comatoſe and doſed much, and had another attack of the hæmorrhage. The following was preſcribed:

℞ Theriac. Venet. ℈i.
Sal. ſuccini.
Camphor. aa gr. iii.

He ſweated ſome in the night, but had little or no reſt.

On the 29th, the heat of his ſkin continued; his pulſe was ſmall and quick,

and his breath very offenſive. The bark decoction was again preſcribed; and as he was coſtive, a glyſter was injected in the evening. However, in the night, he was delirious.

On the 30th, he was comatoſe and ſleepy. He took the bark decoction and wine freely. At night, no alteration; a bliſter was applied betwixt his ſhoulders.

The 31ſt, he ſtill continued comatoſe; his pulſe was a little better, and the bark decoction was repeated, with a few grains of the powder in each doſe.

Auguſt 1ſt, he was very ſenſible; his pulſe began to riſe; his bliſter was dreſſed, but digeſted ill. P.

On the 2d, he was pretty eaſy. As the bark purged him, a few drops of laudanum was added to each doſe.

On the 3d, he continued to recover; he had no appetite, but a great craving for wine; it was allowed him freely, and he perſiſted in the uſe of his medicines. After this, his appetite began to return, and he recovered gradually.

On the 10th, he fell into a purging, which was removed by a few doſes of

rhubarb and diaſcordium. As he was ſtill weak, the tincture of bark was preſcribed twice a day.

On the 27th, he was able to go to Calcutta.

The ſeven following caſes are ſelected thoſe which happened at Bengal.

CASE VI.

Culpee, 1768. Henry Pope, ſeaman, a young man of a very ſtrong and healthy conſtitution, was ſent, on the 30th of Auguſt, along with ſome others, to aſſiſt the Ankerwyke, that paſſed us in great diſtreſs, in her way to Calcutta. The people were employed at hard work, conſtantly relieving one another at the pump.

On the 3d of September, he was ſeized with ſickneſs at ſtomach, violent head-ach, and bilious vomiting, which obliged him to retire from his duty. When he aſked for medical advice, he was ordered to return to his labour, with a hint that his diſeaſe was only the effect of drunken-

neſs.

nefs. Next morning he found himfelf a little eafier; but the head-ach ftill continued, and he was very weak and feeble. Being affronted at the judgment paffed upon him, he made no farther complaints, aud was fent with his fhip-mates in a boat to return to Culpee. In the afternoon, he was again feized with fever, great agony at ftomach, inceffant vomiting, head-ach, and drought.

September 6th. On the evening, when I firft faw him, he complained of the moft acute pain at the ftomach, which was fwelled, and very painful to the touch. His head ached violently, his tongue was furred, his countenance yellow and ghaftly, and his fkin was cold and clammy. He was ordered fome warm wine and water, which he immediately rejected with a ftrong hiccup. A grain of opium and fomentations were prefcribed. After this, his fkin became warm, but his pulfe was fmall and fluttering. In an hour, the vomiting returned as violently as ever, and he had two purging bilious ftools. He drank fome warm

camomile tea to cleanſe his ſtomach; a ſaline draught, with laudanum, was preſcribed at bed-time, and the following was left to be taken in an effervеſcent ſtate during the night:

℞ Aq. menthæ ſimp. ℥iv.
Sal tart. ʒi.
Sach. alb. ℥ſs. m.
Cap. cochlear. i. cum q. ſ. ſucc. limon. urgenti nauſea.

During the night, he vomited and purged frequently.

On the morning of the 7th, his ſkin, but particularly his temples, felt very hot; his countenance was wild and ſtaring, and his tongue very brown and parched. Two ounces of the following were preſcribed every hour:

℞ Decoct. tamarind. ℥xii.
Mann. ℥i.
Tart. emet. gr. i.

In the afternoon, he had three eaſy ſtools; but the pain in the ſtomach, and over the whole epigaſtric region, continued as violent as ever. His ſkin was more cool, and his pulſe better. A grain of opium

was given, an anodyne cataplaſm applied to his ſtomach, and a ſtrong decoction of bark was left with his attendant, to be taken as often as his ſtomach would bear.

In the morning of the 8th, he was inſenſible at times, and complained of great pain all over the epigaſtric region. His pulſe was very ſmall, quick, and fluttering; his ſkin hot and clammy; and he frequently applied his hand to his temples. An emollient glyſter was injected, his head ſhaved, the fomentations repeated, and the ſaline draughts were preſcribed, as the bark would by no means ſit upon his ſtomach. Through the day he had ſeveral bilious ſtools; his pulſe was irregular, and his ſkin clammy. He was frequently very ſenſible, and made rational anſwers; but, in a moment, he would ſtare wildly, and become very delirious. His feet were immerſed in warm water and vinegar. At night, he was very ſenſible; his belly was ſtill ſwelled; and he complained of great pain in the region of the liver. The ſa-

line draughts and fomentations were continued, and a blister applied to the part affected. In the night he raved much, and purged very frequently.

The 9th, in the morning, he had short intervals of sensibility, and complained of the most excruciating pain in his stomach and in the region of the liver. The fomentations were continued, and he took the following at separate draughts.

℞. Decoct. tamarind. ℥vi.
Sal cathart. ʒiii. m.

Through the day, he was, for the most part, insensible, and covered with cold clammy sweats. In the afternoon, when I visited him, his breath was very fœtid, and he had two offensive stools. The bark decoction was again prescribed, which now sat upon his stomach. At night, he seemed very calm, quiet, and sensible, but, in an instant, would talk very incoherently, and his face became convulsed. These fits returned frequently, and were succeeded by a delirium, which continued through the night. The bark decoction with laudanum was prescribed.

6

The 10th. On the morning, he was again very ſenſible; but his ſkin was clammy and moiſt, his pulſe weak and fluttering, and he was troubled with frequent ſubſultus tendinum, tremors, and ſtrong hiccup. The bark decoction, with laudanum was continued, and he was ſupported with wine; however, every thing he took was ſoon carried off by ſtool. The mortal ſymptoms encreaſing, nothing farther could be expected from medicines, which were therefore laid aſide. At ſeven o'clock, his pulſe failed, he lay ſpeechleſs, and was carried off by convulſions at night.

CASE VII.

September 8th. Thomas Bullman, carpenter's mate, aged twenty, was ſeized in the morning with rigors, head-ach, and ſickneſs at ſtomach. Theſe ſymptoms were ſoon ſucceeded by heat, drought, and reſtleſſneſs; but his pulſe was feeble, and little quicker than natural. An antimonial puke was preſcribed, which diſcharged much bile. At night, the

the feveriſh acceſſion returning, half the powder, N°. 1, was given at bed time; he reſted ill in the night, but towards morning fell into a profuſe ſweat.

The 9th. When I viſited him, he was pretty free from fever, but his head-ach ſtill continued, and he was weak, feeble, and giddy. At noon, he was ſeized with ſlight rigors; and, as the paroxyſm advanced, he turned exceſſively hot, puked up gall, and was diſpoſed to rave. The ptiſan, N°. 2, was given, which operated upwards and downwards. At four, a dram of bark was preſcribed every two hours, which ſat well upon his ſtomach. Through the reſt of the day his pulſe was almoſt natural, but the head-ach and pain of his back were very uneaſy. P. He had little or no reſt in the night.

In the morning, he was free of fever. As he had only taken two doſes of bark in the night, two drams were exhibited at eight; and a dram was continued in red wine every two hours. He took an ounce by night, and had no exacerbation of the fever.

The 11th and 12th. He was free of fever, but weak, feeble, and giddy. The bark was still continued. From this time, I did not visit him; he gave over his medicines, and soon suffered a relapse.

20th. In the morning, I found him confined to his bed; he was much exhausted, and complained of great head-ach and a troublesome cough; his countenance was very ghastly, and he had not the least appetite. A vomit was prescribed, which discharged a considerable quantity of viscid bile. At night, his skin became hot and clammy, his cough was very uneasy, and he puked up some ropy phlegm. A dose of the elixir paragoric. was prescribed at bed-time; however, he passed a very restless night.

21st. In the morning, his skin was cool; he complained of a head-ach, and the cough still continued. Wine was prescribed freely, and he took a dram of bark every two hours. At night, the cough remitted, and the feverish paroxysm returned. The anodyne draught was repeated. He sweated much in the

night, the cough was again troublefome, and he got little reft.

On the 22d, he was pretty eafy, but very feeble. The bark was continued, and his drink was acidulated with fpirit of vitriol.

23d. In the afternoon, he was very hot and reftlefs, his cough increafed, and he became fick at ftomach. The vomit was repeated. P.

After this, he began to recover daily; the hectic heat and cough difappeared. The bark, however, was continued for fome time longer, and rhubarb was occafionally given, as he became coftive.

On the 29th, his complexion and appetite began to return; but it was the end of October before he was fit for duty.

CASE VIII.

September 10. Jofhua Archer, gunner's mate, in the morning was fuddenly feized with violent head-ach, ficknefs at ftomach, and pains above his eye-brows. His countenance foon became flufhed, his pulfe full and ftrong. The heat of his

his ſkin was very conſiderable, and he continually vomited up bile. He was blooded; but when ſix ounces were taken, his pulſe began to flag. The emetic powder, as in the above caſe, was preſcribed. The pain of his ſtomach was relieved, but he grew more reſtleſs; his head-ach became almoſt inſupportable, and his ſkin very hot. At night, his pulſe was 115. The pediluvium was uſed, and an antimonial draught was preſcribed.

On the morning of the 11th, he had a very ſevere acceſſion of fever, with pain and ſickneſs at ſtomach. He took four doſes of bark.

The 12th, the feveriſh paroxyſm returned, at three in the morning. When I viſited him, he was in a gentle moiſture; his tongue was foul; his pulſe ſmall, quick, and feeble; and he complained of great head-ach and giddineſs. The bark ſat eaſy on his ſtomach; but by night he had only taken five drams.

On the morning of the 13th, he had a ſlight paroxyſm, but would not be pre-

vailed

vailed upon to take his medicine regularly. His fever returned in the night. Next day, he took six drams of the bark, and, on the 15th, was free from every complaint, except weakness.

On the afternoon of the 21st, he was seized with a feverish paroxysm, much more severe than ever. When I saw him, in the morning of the 22d, he was in a profuse sweat, but complained of head-ach, and said he had suffered so much in the night, that he would now willingly take any medicine. The bark was again prescribed every three hours.

On the 23d, he complained of a cough, and had a slight pain in his right side. The bark was continued, with a few grains of rhubarb, and he seemed to recover fast.

On the 28th, he was feverish, much dejected, and the pain under the right hypochondrium was troublesome. A blister was applied to the part affected; the bark was continued three times a day, with a cupful of the following infusion:

℞ Flor.

℞ Flor. chamæm. ℥ſs.
Sal tart. ʒi.
Aq. bullent. ℥viii.
Infunde per duas horas, et cola.

On the 31ſt, he was cool; the cough and pain in the ſide were removed; and he was able to go about. He continued his medicine for three days more, and, though weak, returned to duty.

CASE IX.

September 13th. James Hutton, ſeaman, aged twenty-five, of a ſtrong conſtitution, in the morning, was ſeized with giddineſs, head-ach, violent pain at the pit of the ſtomach, and fell down in a fainting fit. As he continued inſenſible for ſome time, a vein was opened; when four ounces of blood were drawn, he came to himſelf, and complained of great weakneſs and violent head-ach. He had a reaching to vomit; his pulſe ſoon became more full, and his countenance fluſhed. The ptiſan, N°. 3, was preſcribed. About eleven, the paroxyſm was greatly increaſed; the heat of his body

body became intenſe, he was very reſtleſs, had ſlight ſubſultus tendinum, and ſeemed diſpoſed to rave. His medicine diſcharged much bile by vomit and ſtool, and ſweated him profuſely. At night, he was eaſier, but ſtill complained of great feebleneſs and head-ach.

On the morning of the 15th, he had a feveriſh paroxyſm, with great inquietude and drought; his pulſe was 100, and his tongue was foul and dry. The purging ptiſan, No. 4, was preſcribed, which operated ſeveral times. In the afternoon, a profuſe ſweat relieved him conſiderably. A draught, with two ounces of the bark decoction, and a ſcruple of the powder, were preſcribed every hour, which ſat eaſy upon his ſtomach. P.

15th. He paſſed a very reſtleſs night; however, he continued his medicine, and, towards the morning, had a purging bilious ſtool. When I viſited him, his ſkin was cool, but clammy; his pulſe ſmall, but very little quicker than natural; his breath was offenſive, and his countenance ſallow and dejected. A dram

of

of bark was prefcribed every hour and a half, in a glafs of red wine. At night his pulfe was better, and he was in a warm fweat, and had taken feven dofes of his medicine.

The 16th, in the morning, though weak and feeble, he was perfectly free from fever. The bark and wine were repeated every two hours. He continued its ufe, thrice a day, for fome time longer; his appetite began to return; and in a fortnight he was fit for duty.

CASE X.

September 16. ——— ———, of a weak and delicate conftitution, long fubject to a train of nervous fymptoms, for which, in his own country, under the direction of an eminent phyfician, he had tried every remedy in vain. As the only remaining refource, he was advifed a long fea voyage and a warm climate, which foon relieved his former complaint. Being in the way of infection, on the 16th of September, he was feized with the common

mon ſymptoms of fever; he went to bed, and drank ſome warm tea, and vomited abundantly. In an hour, the feveriſh paroxyſm increaſed exceedingly. A grain of emetic tartar diſſolved in rice-gruel was taken at ſeparate doſes, which ſweated him very profuſely; but as no remiſſion followed, one half of the powder, N°. 1, was preſcribed at bed-time; he continued reſtleſs through the night, his head-ach increaſed, and he was diſpoſed to rave.

On the morning of the 17th, his ſkin was cool, his pulſe pretty natural, but he ſtill complained of great oppreſſion, head-ach, and faintneſs, The electary, N°. 6, was given every hour. In the afternoon, he had two ſtools, which occaſioned a great dejection of ſpirits; his medicine was therefore changed, and a dram of bark preſcribed every two hours; however, in the night, he had another acceſſion of fever, and continued reſtleſs; but, towards morning, he fell into a profuſe ſweat.

On the morning of the 18th, he was free from fever, but very weak, feeble, and giddy. His arms and breaſt were full

of milliary eruptions. Being confined to a ſmall apartment from the firſt attack, he was removed to the great cabin, where enjoying a more free air, he found himſelf inſtantly relieved. Fearing another attack of his fever, he took two drams of the bark in the morning, and a dram regularly every hour, till an ounce and half were uſed. This large quantity ſat eaſy upon his ſtomach, and procured one copious ſtool.

On the morning of the 19th, he was pretty free from every feveriſh ſymptom, but was ſtill very feeble and faint. About mid-day, he was ſeized with dimneſs of ſight, ſaw objects double, his mouth and jaws were affected, and he faltered in his ſpeech. Theſe having formerly been ſymptoms of his nervous complaint, did not much alarm him. The bark and wine were continued every three hours, and, at night, he found himſelf perfectly eaſy, though weak. From this time, the fever left him; but he fell into profuſe ſweats, his appetite did not return, and he was troubled with acidity and low ſpirits.

ſpirits. For theſe complaints, he took magneſia, aſa fœtida, bark, and bitters. He uſed the cold bath, and in a month was reſtored to his uſual health.

CASE XI.

September 24th. William Johnſton, ſeaman, a young man of a delicate conſtitution, who had never before been in a warm climate, in the morning was ſeized with head-ach, ſickneſs at ſtomach, and vomiting of bile, which he encouraged by drinking warm tea. At ten, when he ſent for me, he was in great agony from the pain in his ſtomach, and was poſſeſſed with the greateſt fear of dying immediately; his countenance was fluſhed, his ſkin exceedingly hot, and every thing he drank was rejected. Fomentations were applied, and a grain and a half of ſolid opium was preſcribed. In an hour and half, the pain of the ſtomach remitted, but the feveriſh paroxyſm increaſed. The ptiſan, N°. 2, with only one grain of tartar emetic, was ordered in ſeparate draughts, which diſcharged abund-

abundance of bile upwards and downwards, and ſweated him profuſely. At night, his ſkin was cool, and his pulſe pretty regular; but when out of bed, he was feeble and giddy. Two ounces of the bark decoction were ordered every hour.

The 25th, in the beginning of the night, he had ſome reſt; in the morning, the feveriſh paroxyſm returned, and he vomited frequently. When I ſaw him, he was was in a clammy ſweat, the nauſea, anxiety, and reſtleſſneſs ſtill continued, with a fullneſs at ſtomach, and aching above his eye-brows. He took the preſcription, N°. 4, and, without waiting for the full effects of the medicine, a dram of bark was given every two hours, in red wine. At night, he had three ſtools; he was weak, feeble, and faint. The bark was preſcribed every hour.

The 26th, as he was afraid of another attack, he took his medicine ſix times in the night. In the morning, his ſkin was cool, and he was free of head-ach, but complained of great feebleneſs and giddi-

 neſs,

nefs, when in an erect pofture. The bark was continued every four hours, with wine; the return of the fever was prevented, and he recovered daily.

In the beginning of October, he was feized with the dyfentery, which was very frequent on board. As I did not attend him, I do not know how he was treated.

On the 12th, being fent to the hofpital, he died in his paffage to Calcutta.

CASE XII.

October 18th. Mr. M—, aged twenty-two, after attending a fale of clothes, belonging to fome deceafed gentleman, and walking home in the heat of the fun, was feized with flight chilly fits, head-ach, and ficknefs at ftomach. His fkin foon became hot, his countenance flufhed, the pain of his head increafed, with difficulty of breathing, and heavy fighs. Half the powder, N°. 1, was given every hour, which operated well. In the night, all his complaints increafed, the paroxyfm ran high, and he became delirious.

On

On the morning of the 19th, he was ſenſible, but ſtill complained of head-ach; pains in his back, drought, oppreſſion, and inquietude; his tongue was foul, and his pulſe 100, ſmall, and quick. As he refuſed the bark in ſubſtance, two ounces of the bark decoction were preſcribed every hour, but having an averſion to the medicine he did not take it. In the afternoon, his ſkin was very hot, his pulſe 115, and the paroxyſm became violent. Five grains of the powder, N°. 1, were given in a ſaline draught, and the pediluvium uſed. At night, he was delirious. His medicine was repeated, and the bark left with his attendants, to be given as often as he could be prevailed upon to take it.

On the morning of the 20th, his ſkin was pretty cool, his pulſe ſtill quick, and his tongue foul and parched; he had a gloomy look, and ſeemed to be affected with ſtupor. As he could not be prevailed upon to take the bark, it was changed for the ſaline draughts. At night, he became very reſtleſs, had a

wild countenance, and appeared diſordered in his ſenſes; his feet were bathed, a large bliſter applied betwixt his ſhoulders, and a draught, with a quarter of a grain of emetic tartar was preſcribed every four hours. In the night, he was very delirious and unmanageable.

On the morning of the 21ſt, his pulſe was ſmall, quick, and fluttering, his ſkin clammy, his teeth covered with a black cruſt, and he was comatoſe and delirious at times; his breath and all the excretions were very fœtid. He was taken out of bed and ſhifted, and his feet immerſed in warm water. The bliſter diſcharged well, and was dreſſed; the bark was again tried, and he ſwallowed one doſe with great difficulty. Through the day, his pulſe frequently varied, and he continued comatoſe, inſenſible, and ſtupid. At night, he had frequent ſubſultus tendinum. As he now refuſed every medicine, ſinapiſms were applied to his ſoles.

On the 22d, he continued in the ſame ſtate of inſenſibility, his tongue was black, his breath exceedingly offenſive, and his

 bliſter

blifter had a gangrenous appearance. At night, his extremities became cold, his fkin was clammy, his ftools ran off involuntarily, and, about four next morning, he died in convulfions. His body, foon after death, was covered with livid fpots, and the room in which he lay was very offenfive, although it was frequently fprinkled with camphorated vinegar.

Mr. L—— having accompanied the former gentleman, whofe cafe is related, was feized at the fame time with the fever. After cleanfing the primæ viæ, he took the bark in large dofes, and foon recovered.

CASE XIII.

April 9th, 1771, lat. 4 deg. 33 min. N. Henry Caftles, gunner's mate, aged thirty-fix, brought up to the fea, and never before fubject to ficknefs, laft night, at twelve o'clock, was feized with rigors, pains in his back, heat, drought, and frequent vomiting. Thefe complaints continuing, in the morning he took half a grain of emetic tartar. When I faw him, his countenance was flufhed,

his ſkin hot, and his pulſe 96; his ſtomach was tenſe, ſwelled, and painful to the touch; he was in the utmoſt agony, and continually vomited up bile. A grain of opium was given immediately, fomentations were uſed, and, two hours after, the purging ptiſan, N°. 4, was preſcribed. The nauſea abated, and he retained the phyſic, which procured him four bilious ſtools. At night, he was in a profuſe ſweat, his pulſe was 80, and the pain of his ſtomach abated. The bark was preſcribed, but his ſtomach did not retain it.

The 10th. At two in the morning, he had a violent acceſſion of fever, with unſufferable head-ach, nauſea, and vomiting. At eight, when I ſaw him, his pulſe was very ſmall, quick, and obſcure; he complained much of head-ach and giddineſs, his countenance was gloomy, and his eyes red and watry; the pain, tenſion, and ſickneſs at ſtomach remained. Half an ounce of the ſal catharticus was preſcribed at two ſeparate draughts; and two hours after, he began the bark decoction,

coction, with the tincture. At night, he had taken ſix doſes of the decoction, and had two purging ſtools; his ſtomach was eaſy, leſs ſwollen, and his pulſe was more firm. Fifteen drops of laudanum were given in the bark decoction at night.

The 11th. The feveriſh paroxyſm returned at twelve laſt night. On the morning, when I viſited him, his ſkin was clammy, he complained of great anxiety, drought, head-ach, and diſorder at ſtomach, which was painful and much ſwelled. Large ſtupes of flannel were wrung out of a warm fomentation, and applied to the abdomen; the ſalts were repeated as yeſterday, and two drams of powdered bark were added to eight ounces of the decoction, which was given, after the firſt ſtool, in as large doſes, every hour, as his ſtomach would bear. At night, he was eaſy, and the whole of his medicine ſat well upon his ſtomach. It was continued through the night, with a few drops of laudanum to prevent it from running off by ſtool.

The 12th. He had a flight paroxyfm last night, and awaked calm in the morning, but was very weak, feeble, and giddy. A dram of bark was prefcribed every two hours in red port; at night, he had taken an ounce, was much eafier, and in better fpirits. After this, he recovered daily. He was allowed a frefh diet from the captain's table, continued the bark and wine thrice a day, and, on the 26th, though weak, returned to duty.

On the 1ft of May, he relapfed; the feverifh paroxyfm was very fevere, attended with great pain and heat at the pit of the ftomach, and vomiting of bile; his eyes and countenance became yellow, as in a jaundice. After cleanfing the firft paffages by the prefcription, N°. 4, a grain and a half of folid opium was given, and the bark prefcribed every hour in dram dofes. By this means, the next paroxyfm was mitigated, and his fever totally left him on the 3d. He continued his medicine three times a day to the 6th. Having omitted the bark on the 8th, he was again feized with a feverifh paroxyfm,

roxyſm, continuing for twenty-four hours, and which was not removed till he took an ounce of the ſame medicine. After this, his ſtomach was very weak; his countenance continued ſallow; but, by the uſe of bark, bitters, and rhubarb he was reſtored to health, and, on the 19th, returned to duty.

CASE XIV.

June 2d, 1771, lat. 34 deg. S. Robert Lavender, aged about thirty, in the afternoon, was ſeized with ſhuddering, and pain in his back and limbs. When I viſited him, his ſkin was exceedingly hot, his pulſe quick, full, and ſoft, and he complained much of head-ach, and drought. The antimonial powder, N°. 1, was preſcribed, which puked him ſeveral times. His fever ſtill running high, half a doſe was repeated at bed-time.

On the morning of the 3d, the feveriſh ſymptoms continuing, the ptiſan, N°. 2, was preſcribed, which purged him ſeveral times, and ſweated him profuſely. In the afternoon, his ſkin, was pretty cool, his pulſe

pulſe 90, but he ſtill complained of faintneſs and head-ach. A dram of bark was given every hour in a ſaline draught, which ſat well upon his ſtomach. In the night, he had an acceſſion of fever, and omitted his medicines.

The 4th. In the morning, his ſkin was hot, but a little moiſt, and his pulſe 100; his eyes were red and watry, his tongue and teeth very foul, and he was troubled with the greateſt anxiety and reſtleſſneſs. A dram of bark was preſcribed every two hours, and his drink was acidulated with cremor tartari. At four in the afternoon, he had taken five doſes of his medicine; his pulſe was 114. At ſeven, he fell into a profuſe ſweat. —The head-ach continuing ſevere, his feet were immerſed in warm water. At twelve, he ſtill ſweated plentifully, the head-ach and drought abated, and his pulſe fell to 96. At night, he had taken an ounce of the bark; it was therefore only preſcribed every four hours.

The 5th. He ſweated and reſted pretty well in the night. This day his ſkin was

per-

perfectly cool, his pulse 80, and his tongue white and moist; he had little or no thirst; but complained of giddiness. As the bark began to purge him, he was advised to continue it every two hours with laudanum, which he neglected. At four in the afternoon, he had an exacerbation of fever, with very great heat, head-ach, and drought. At eight, he was in a profuse sweat, his pulse 100. Two ounces of the bark decoction, with five drops of laudanum, were prescribed every two hours.

In the morning of the 6th, he was quite free of fever, the redness of his eyes disappeared; but he was still very weak, feeble, and giddy. In the afternoon, his fever returned; his pulse rose to 100, and his complaints terminated in a sweat. He took six drams of the bark in the day.

On the morning of the 7th, his skin was again hot, his pulse a little frequent. In the afternoon, he had great thirst and was feverish for an hour; but soon after, he fell into a profuse sweat. He took six drams of bark in the day.

Next

Next day, he was free from fever, but was exceedingly weak, giddy, and faint. The bark was continued, and a bottle of red port allowed in twenty-four hours, in his ſago, rice-gruel, and drinks. After this, he fell into profuſe ſweats in the nights, which were removed by the bark and tincture of roſes. On the 15th, he was able to return to duty, and ſoon recovered his ſtrength.

CASE XV.

July, 4th, 1771. lat. 6 deg. N. John Connor, one of the company's recruits, who was never before in a warm climate, on the 2d of the month, was ſeized at night with chilneſs, which was ſucceeded by violent head-ach, drought, quick pulſe, and other ſymptoms of fever. He got a few doſes of the antimonial powder, N°. 1, which ſweated him profuſely. Next day he was free from fever.

On the morning of the 4th, when I firſt ſaw him, his ſkin was moiſt and cool, his pulſe was 90, his tongue was foul and

and furred, and he complained of great giddineſs and head-ach. Two ſcruples of the bark were preſcribed every hour in red wine, which ſat eaſy upon his ſtomach. At four in the afternoon, his ſkin became very hot, and his pulſe beat 112 in a minute, ſoft, and ſmall. At night, he was in an equable ſweat, his pulſe fell to 84, but he looked very ſtupid. He took half an ounce of the bark.

The 5th. About one in the morning, he had two purging ſtools, was delirious, and refuſed his medicine. When I ſaw him, his ſkin was moiſt, his pulſe was 80, ſoft, and full; he was very ſenſible, complained of great head-ach, and had ſtrong pulſations in the carotid arteries. His head was ſhaved, the pediluvium uſed; the bark was continued every two hours in the ſaline draughts, with a few drops of laudanum, to prevent it from running off by ſtool. At eleven p. m. his head-ach was more ſevere; his pulſe quicker and more feeble, and he ſeemed to be ſlightly affected with ſtupor.

6th

6th. He dofed fome in the night, but had no refrefhing reft. In the morning, he was perfectly fenfible, but the head-ach and pains in his temples remained; his pulfe was 96, his tongue foul, black, and furred. His temples were bathed with oxycrate, the pediluvium was ufed frequently, and the bark was regularly continued. He was in a gentle moifture through the day; at night, he was free of head-ach; his pulfe was 84, very regular and foft; he refted very well in the night, and continued quite calm and free of fever.

On the morning of the 7th, he was weak, feeble, and giddy, when out of bed. Port was allowed, and the bark was repeated every three hours.

The 8th. He continued to recover.

On the 9th, he went upon deck, and had a return of his head-ach and fever, which foon difappeared by the ufe of the bark.

After this, he was allowed a frefh diet, and was foon reftored to his ufual ftrength.

CASE

CASE XVII.

Lat. 6 deg. 41 min. N. Robert English, carpenter's mate, aged twenty-three, very liable to fevers of a few days standing, when in a warm climate, on the 27th of August, 1771, was seized with chilness, violent pain in his head, back, and betwixt his shoulders, and alternate flushes of heat and cold continuing most part of the night. Four days before this, he was blooded, and took two doses of salts, on account of an inflammatory gonorrhœa.

On the 28th. When I was first made acquainted with his complaints, his skin was intensely hot, his head ached violently, his tongue was dry and parched, his pulse was 112, pretty strong, but soft. Half the powder, N°. 1, was prescribed every three hours, which discharged much bile and sweated him profusely.

On the morning of the 29th, he was still exceedingly hot and feverish. As the antimonial had not procured him a stool, a dose of salts was ordered, which ope-

rated well and relieved him considerably. About eleven at night, the feverish paroxysm returned with great violence, during which he complained of great inquietude; his pulse was 90, feeble, and oppressed; his feet were bathed in warm water, and lemonade was ordered for his common drink.

On the morning of the 30th, all the symptoms were mitigated, his pulse returned to its natural standard, and he only complained of great prostration of strength. A dram of Peruvian bark was prescribed at nine, which sat easy upon his stomach. In an hour, the feverish paroxysm returned, his head-ach became unsupportable, the muscles of the scapula, and almost universally over the body, were affected with spasmodic twitches; his pulse varied much, was sometimes 90, sometimes 115, small, soft, and feeble. As he was in the greatest agony, a dose of laudanum was given. After the use of warm fomentations, he fell into a profuse sweat, and found himself easy; he continued the use of the bark, and before night had

had taken about an ounce. About two in the morning, he had another acceſſion of fever, which continued three hours, during which time his ſtomach rejected the bark.

On the morning of the 31ſt, he had a very diſtinct remiſſion, his pulſe was 86, his tongue was ſore and covered with a black cruſt, and he complained of the greateſt proſtration of ſtrength and dejection of ſpirits. A dram of the bark was continued regularly till twelve, when he was ſeized with the moſt violent head-ach; his eyes became dull and heavy, and his ſkin very hot; his pulſe was 96; he had continual twitches of the muſcles of the neck, tremors, and ſubſultus tendinum, and complained of dimneſs of ſight. His feet were bathed, a bliſter was applied to the head, an opiate preſcribed, and the bark was repeated, which ſat well upon his ſtomach. The ſymptoms rather became more violent; his feet were frequently immerſed in warm water, and he continued ſenſible. About nine at night, his head-ach re-

mitted, he ſaw diſtinctly, and his ſkin was moiſt, but the tremors ſtill remained in a ſlight degree. As he had taken a large quantity of the bark in the day, two ſpoonfuls of the camphorated julep were preſcribed every two hours.

September 1ſt. Towards the morning, he ſweated profuſely, and when I viſited him, he was free of fever, but was exceedingly weak and faint; his breath was offenſive, and his tongue dry and black. He was allowed port wine; and, in order to prevent another attack, he willingly continued the uſe of the bark. By twelve at night, he had taken ten drams, and was diſpoſed to ſleep. He reſted well in the night.

On the 2d, his ſkin was cool, and he had little or no head-ach, but complained of giddineſs and dimneſs of ſight, when he moved out of his hammock. He eat ſome pumkin tart at dinner, and took a dram of the bark regularly every four hours.

For the three following days, he kept recovering.

On

On the 7th, at night, when the weather was very cloſe, he went upon deck, but was immediately ordered below.

From this to the 12th, he drooped much, was very low ſpirited and dejected, and could not be perſuaded to take his medicine.

On the 13th, his fever increaſed, his pulſe roſe to 100, his tongue became ſore, ſtiff, and ſwelled, and aphthæ appeared in his throat.

On the 14th, a black cruſt fell off from his tongue, and expoſed to view ſeveral ſmall ulcers. A gargle, with honey and barley-water, was preſcribed.

From this to the 16th, little alteration happened, although he took from three drams to half an ounce of the bark daily.

On the 16th, he again appeared to be free from fever, but was exceedingly extenuated, and reduced to the greateſt pitch of weakneſs. The aphthæ in his mouth, and the ſoreneſs of his tongue remained. He was allowed wine freely, which now he did not reliſh; therefore, he was indulged in his deſires, whether he called

for a little punch or porter. He continued the bark, taking about three drams every day.

On the morning of the 19th, he was taken out of bed, conversed chearfully, and seemed to be much better than usual. About eleven in the forenoon, in an instant, he found himself indisposed, and desired to be assisted to his hammock. He was seized with convulsions, his extremities became cold, he was speechless, and had all the appearances of approaching death. A spoonful of cordial julep, N°. 8, was poured into his mouth frequently, and bottles of warm water were applied to his feet. In three hours, he returned to his senses. After this, he became comatose, and his pulse was very small, quick, and irregular. A blister was applied betwixt his shoulders, the julep was given at times, and he was supported with wine. His strength and spirits seemed now to be too much exhausted to expect any thing from medicines.

From this time, the convulsive fits returned frequently. On the 23d, he purged

purged a confiderable quantity of putrid bilious matter, he lay comatofe, infenfible, and died in the evening.

Upon opening the abdomen, the omentum was found very much wafted, but what remained of it was found; the liver was in a natural ftate, and the gall-bladder contained an ounce of dark-coloured bile. All the inteftines feemed found, except the duodenum, which was putrid and corrupted for feveral inches, and contained fome ounces of fœtid matter, refembling a mixture of pus and bile. On examining the encephalon, the meninges, brain, and cerebellum were of a natural appearance, and the cortical and medullary fubftance was found, and bore handling better than in moft fubjects; but in the left ventricle there was found about half an ounce of bloody ferum. The cavity of the thorax was not examined.

CASE XVIII.

Canton, December, 1771. Mr. Audley's fervant, a young man of a healthy

constitution, was seized with rigors, pain in his head and back, succeeded by a feverish paroxysm, which did not terminate in a regular remission. His surgeon had given him a puke and purge. He was blooded on the 17th, at night, and some doses of emetic tartar were prescribed, which purged him frequently.

On the 18th, I visited him along with Mr. Gowdie, surgeon of the Horsenden Indiaman, and we found him in the following condition. His countenance was very gloomy, and his eyes dull, his tongue black and furred, and his throat full of aphthæ; he complained of continual nausea, strong hiccup, and difficult deglutition; his pulse was 120, strong and soft; he had frequent tremors, with subsultus tendinum. Two ounces of bark decoction, with laudanum, was prescribed every hour, which he retained, and he was ordered weak cinnamon-tea for his drink. At night, his pulse were very small and quick, and he became delirious. The pediluvium was used, and his medicines were continued. He was very insensible

ſenſible in the night; and towards the morning had two purging ſtools.

19th. In the morning, when we viſited him, he lay comatoſe, but anſwered queſtions rationally, when rouſed; the aphthæ in his throat appeared more numerous, with a lard-like appearance on the top; his tongue was ſwelled and more furred, the ſubſultus and hiccup continued, and the tears ran off involuntarily; but his pulſe was pretty firm 110. The bark decoction was continued, with half a dram of the powder. At night, he became inſenſible, his pulſe was 118, and he ſwallowed with difficulty, and continued delirious in the night.

On the morning of the 20th, he lay calm and quiet, his pulſe beat 100, the fauces and throat were more thickly covered with aphthæ, and his breath was fœtid. The bark draughts, with laudanum were continued, his head ſhaved, and a detergent gargle was preſcribed. At night, his fever ran high, and the hiccup was very ſtrong. The bark decoction was repeated, and the following draught was preſcribed at bed-time:

℞ Mosch. gr. xv.
Sach. alb. ʒii.
Mucilag. g. Arab. ʒi.
Aq. cinnam. ten. ℥i. m.

21st. Towards morning, he purged frequently. When we visited him, he was pretty sensible; but his pulse was still very quick, his skin hot, his tongue dry and black, his teeth and lips covered with a tenacious slime, and the hiccup and subsultus tendinum were more frequent than ever. The musk draughts, with ten drops of laudanum, were continued every six hours, and, in the intervals, the bark decoction was given as before. His medicines sat easy upon his stomach; thro' the day, he was free from hiccup and subsultus tendinum, and at night was in a warm diffused sweat.

The 22d. Last night, he had two purging stools, and was insensible at times. In the morning, he was calm, the hiccup was severe, his mouth was very sore, and he slavered much. As all the excretions were now very offensive, the room in which he lay was kept very cool, and fre-

quently

quently ſprinkled with vinegar. The muſk and bark draughts were ſtill continued.

From this time till the 25th, I did not viſit him; the hiccup and ſubſultus tendinum were leſs frequent; mitigations were ſtill obſervable in the day-time; but at night, the exacerbations of fever always returned, which induced Mr. Gowdie to give him a large doſe of opium at bed-time, beſides the laudanum in his bark draughts; yet, notwithſtanding, the periodical ſtools in the morning carried off a conſiderable quantity of the medicines he took in the day.

On the 25th. The aphthæ appeared much more enlarged, his tongue was ſwelled and ulcerated, the acrid ſaliva began to corrode the left angle of his mouth, his breath was exceedingly offenſive, and his countenance very ghaſtly.

On the 26th. He purged frequently, and the ulcer in the corner of his lip blooded at times.

The 27th. Petechiæ appeared on his neck and breaſts.

On

On the 29th. Large variegated ſpots, like bruiſes, were obſerved on his legs and arms; and where bliſters had been applied to his ancles, there were ſlight mortifications.

On the 30th. Sloughs from the aphthæ began to throw off; the ſalivation ſtill continued; and as the ulcer in the corner of his lip became deeper, and looked worſe every day, he was turned on the oppoſite ſide. During this time, the hiccup and ſubſultus tendinum appeared frequently. He took the muſk draughts occaſionally, continued the bark decoction, with a little powder, regularly; his drink was cinnamon-tea, with red port, and his ſtrength was ſupported by a very free uſe of wine in his ſago and panado; however, the periodical looſeneſs ſtill returned in the mornings.

On the 31ſt. The right angle of his mouth began to ulcerate, his tongue was very ſore, but his fever was conſiderably abated.

The 1ſt of January. The petechiæ began to diſappear, the vibices were

of

of a better colour, and the aphthæ ſloughed off. During theſe two days, he took an ounce of the bark in powder, and twenty-four ounces of a ſtrong decoction, which he digeſted well.

On the morning of the 2d, he was ſeized with a very ſevere hiccup, and vomited and purged much viſcid ſlime. When we ſaw him, he was much fatigued with the profuſe evacuations; his pulſe was ſmall and fluttering; and he was ſenſible, but exceedingly dejected; the nauſea, hiccup, and purging returned with violence. Judging theſe to be only ſymptomatic from ſordes in the ſtomach and bowels, half an ounce of the tincture of ipecacoanha was ordered in ſeparate draughts of camomile-tea, which he got over with much gulping, and which brought up a conſiderable quantity of viſcid ſlime and black ſloughs.

On the 23d. His pulſe was 84, and he was free from feveriſh ſymptoms, but greatly exhauſted. The vibices were almoſt all gone.

On the 4th. In the morning the hiccup returned with violence; he puked

and purged ſeveral times, and his pulſe was ſo feeble as ſcarcely to be felt. The muſk draughts, with laudanum, were given, and he was ſupported with wine. Theſe complaints returned on the 5th.

On the 6th. In the morning, the hiccup increaſed; he vomited up much black ſlime, which was very offenſive. As the reaching to vomit continued, it was encouraged by a ſtrong infuſion of camomile. After this, he was ſupported with mulled wine; and as his extremities became cold, bottles of warm water were applied to them. The muſk draughts, with laudanum, were repeated; the bark draughts ſat eaſy upon his ſtomach the remainder of the day. At night, his pulſe was pretty firm.

7th. The hiccup was troubleſome at times, and never entirely left him till the 11th. The muſk draughts were repeated occaſionally, which always procured ſenſible relief, and the bark decoction did not run off by ſtool.

From this time, he gradually recovered; however, his intellects were much diſor-

dered,

dered, and he was ſubject to very ridiculous fancies for ſome weeks; but as he regained his ſtrength, his judgment returned.

On the 10th of February, when he ſailed for England, his complexion was healthy; and though ſtill weak, he was in excellent ſpirits.

During the courſe of the fever, this patient took above fourteen ounces of bark in powder, and two pounds in decoction.

CASE XIX.

At Wampoa, Mr. N—, on the 9th of December, 1771, was ſeized with a regular tertian. The paroxyſms were pretty ſevere; but, at firſt, the intervals were diſtinct. Having undertaken his own cure, by an inſignificant preſcription recommended by a friend, the ague changed its type, the remiſſions became imperfect, and it was accompanied with very ſevere quotidian exacerbations.

On the morning of the 17th, he was ſeized with ſlight rigors; and the paroxyſm

roxyſm increaſed, with great heat and ſickneſs at ſtomach. When I firſt viſited him, at two in the afternoon, his pulſe beat 120, his ſkin was intenſely hot and dry, his tongue furred, he was comatoſe, and had ſlight ſubſultus tendinum. Half the preſcription, N°. 1, was given every hour. The ſtupor ſtill encreaſed, and his countenance became wild and ſtaring. At ſeven, he fell into a profuſe ſweat, which continued till twelve, but did not terminate the feveriſh paroxyſm. A draught, with twenty-five drops of laudanum was preſcribed; and two ounces of a ſtrong decoction of bark was directed to be given every hour in the night, and a dram of the powder, as ſoon as his ſtomach would bear it.

At ten next morning, he had taken eight ounces of the decoction and three drams of the powder. He was free of fever, but his head-ach remained. A dram of bark was ordered every hour in red wine, which he continued regularly till night. By this means, a return of the fever was prevented, which, in all pro-

probability, would have proved fatal; but, as he was ſtill very weak, half an ounce was taken daily for ſome time.

On the 22d. He was able to go to Canton, and was ſoon reſtored to his uſual health.

CASE XX.

Lat. 34 deg. 52 min. S. John Chankpur, on the 11th of May, 1772, was ſeized with a feveriſh paroxyſm, which terminated by a profuſe ſweat. In the remiſſions, he was free from fever, but was afflicted with very ſevere head-ach. After the exhibition of a puke, he took the bark in large doſes, and returned to duty on the 15th.

After he gave over the bark, he found himſelf much indiſpoſed, was low ſpirited, had frequent irregular ſhiverings and unremitting head-ach.

May 21ſt. In the afternoon, when I viſited him, his pulſe was very ſmall and quick, his tongue foul, his countenance ſallow, he was weak, giddy, and very low ſpirited. A gentle emetic was preſcribed,

ſcribed, which relieved him conſiderably; but as his ſkin continued hot, the follow-draught was ordered at bed-time:

℞ Aq. menth. ſimp. ℥i.
Vin. antimon. ʒſs.
Laud. liquid. gut. xx. m.

On the morning of the 22d, he was ſeized with rigors, complained of great proſtration of ſtrength and violent head-ach, his pulſe was ſmall and feeble, and the heat of his ſkin below the healthy ſtandard. At eleven, his pulſe was 112, very weak and fluttering, his extremities became cold, and he ſwallowed with difficulty. His feet were bathed in warm water, a large bliſter was applied betwixt his ſhoulders, and a ſpoonful of the cordial julep, N°. 8, was given frequently. In two hours, he became warm, was in a gentle ſweat, but ſtill complained of great head-ach. A dram of bark was preſcribed every two hours in red port. At night, he had taken ſix drams; his pulſe was more firm, and beat 100 in a minute.

The 23d. He was pretty free of fever; his bliſter roſe well. The bark was continued;

tinued; however, at night, his pulſe was accelerated, his ſkin hot, and he had conſiderable thirſt.

On the 24th, his ſkin was cool, his pulſe natural, and the head-ach left him. The bark was continued, and he was allowed a pint of Madeira in the day.

On the 25th. He was free from every complaint, except weakneſs; his appetite began to return, and he was gradually reſtored to health.

SECT. V.

Diet and Preſcriptions.

The following was the diet allowed the ſick on board the Talbot:

BREAKFAST.—A pint of rice-gruel, with a ſufficient quantity of wine and ſugar.

DINNER.—A pint of panado, made with ſoft bread or powdered biſcuit, to which was added a few ſpoonfuls of wine, and a little ſugar.

SUPPER.—As breakfaſt.

The usual drinks were toast and water, rice-gruel, or sage-tea, acidulated with lime-juice or cremor tartari. In the low state, they were generously supplied with wine; and when a nourishing diet was judged necessary, the patients had, for dinner, fresh meat, boiled rice, &c. from the captain's table.

PRESCRIPTIONS.

N°. 1. ℞ Tartar. emet. gr. i.
Magnes. alb. gr. xi. m.
Dosis a gr. vi. ad gr. xii.

N°. 2. ℞ Aq. font. ℥viii.
Tart. emet. gr. ii. ad gr. iv.
Mann. apt. ℥i. m.
Capiat ℥i. singulis horis.

N°. 3. ℞ Aq. font. ℥vii.
Tartar. emet. gr. ii.
Sal. cathart. ab ℥ss. ad ʒvi.
Succ. limon. q. s. ad gratam aciditatem. m.
Capiat ℥ii. singulis horis.

N°. 4. ℞ Decoct. tamarind. ℥viii.
Sal. cathart. ʒvi. ad ℥iss. m.
Capiat duobus vicibus.

No. 5. ℞ Pulv. cort. Peruv. ℥ſs.
Coque ex aq. font. ℥xii. ad ℥vi.
Colatur. adde ſal. cathart. ʒvi.
Tinct. cort. Peruv. vel
Sp. vin. Gallic. ℥ſs. m.
Capiat ℥ii. ſingulis horis.

N°. 6. ℞ Pulv. cort. Peruv. ʒvi.
Tart. ſolub. ʒii.
Syr. com. q. ſ. ut f. elect.
Capiat ʒi. ſecunda quaque hora.

N°. 7. ℞ Cort. Peruv. trit. ℥ii.
Coque ex aq. font. ℔ii. ad ℔i.
Sub finem coction. adde
Gum. Arabic. ʒiii.
Colaturæ adde
Tinct. cort. ℥ii. m.
Capiat ℥ii. ſingulis horis.

N°. 8. ℞ Aq. pur. ℥vi.
Sal. corn. cerv. ℈ii.
Sp. vin. Gallic. ℥i.
Syr. ſimp. ℥ſs. m.
Capiat cochl. i. frequenter pro re nata.

CHAP. III.

Of the Colera, Diarrhæa, Dry Belly-Ach, and Dyſentery.

ALTHOUGH the colera and dry belly-ach are very common diſeaſes in hot climates, and may be termed original; yet, among a number of patients, before a fever or flux becomes epidemic, theſe diſeaſes attack indiſcriminately. Some are afflicted with the colera, ſome with the diarrhæa, and others with all the ſymptoms of bilious colic or dry belly-ach. If theſe diſeaſes are neglected in the beginning, fruitleſs ſtraining, gripes, and teneſmus ſupervene, and the caſe at laſt terminates in a true dyſentery.

As there is not only the greateſt analogy among theſe diſeaſes, but as they nearly depend upon the ſame cauſe, the principal indication of cure in them all is to evacuate the bilious redundancies in the ſtomach and bowels; but in doing this, regard muſt always be paid to the original diſeaſe. In a colera, it would be dangerous to give any medi-

medicines, with this intention, more stimulating than pukes with camomile tea, emollient glysters, and magnesia. After this, the cure depends upon a liberal use of opium.

In the bilious colic, or dry belly-ach, bleeding is sometimes necessary, and the cure, after this evacuation, does not in the least differ from that in the beginning of a flux. The principal intention is to clean the stomach by gentle vomits, to open the belly by mild laxatives, and to appease the pain by opiates, glysters, fomentations, and the warm bath.

SECT. I.

Description of the Dysentery.

A dysentery, for the first days, frequently resembles a simple purging; but as soon as the mucus is washed off the bowels, the gripes and tenesmus become violent, and the pulse is accelerated: the stools are small, mucous, and often bloody. The disease, unless its progress is

is prevented by proper treatment, grows daily worse, till it either proves fatal, or becomes in a manner chronic.

In unhealthy situations, when epidemic fevers rage, the dysentery is very dangerous. It begins with great rapidity, and rather seems to be a symptom of the fever than an original disease. This kind of flux has been justly considered by Sydenham, and the most eminent medical writers after him, as the same disease affecting the intestines. But as it greatly alters the type of the prevailing fever, and differs, in some respects, with regard to the cure, I shall give a description of the putrid dysentery which happened at Bengal, during the sickly season, in 1768.

The disease, for the most part, began with lassitude, slight rigors, disorder at stomach, and bilious vomiting. At first, it exactly resembled the fever, but the paroxysm did not run so high; and the patients were not so apt to rave. In a day or two, sometimes later, the dysenteric symptoms made their appearance, and were attended with the greatest prostra-

tion

tion of strength and spirits. If there had been any remissions of the fever at first, they now disappeared; the skin continued hot, the pulse was small and quick; the tongue became very foul, and the patients were frequently troubled with hiccup.

When the patient applied early for assistance, the fever and gripes were carried off in a few days; and, in general, the disease was either removed or became chronic. If it happened otherwise, the symptoms were daily aggravated; the tongue became very black, and the teeth were covered with a tenacious slime. The nausea, hiccup, and gripes were very severe; the stools were small, frequent, and exceedingly putrid, accompanied with tenesmus, and sometimes procidentia ani. The frequency of the stools soon reduced the patient to the greatest weakness, and his countenance became inexpressibly ghastly.

As soon as the mortification of the bowels took place, the gripes and other painful symptoms suddenly vanished;

 but

but the nauſea, hiccup, and vomiting ſtill continued. The pulſe became ſmall, quick, and fluttering; the ſtools paſſed off inſenſibly, and were intolerably offenſive. In all the patients, at this period, ſubſultus tendinum, tremors, and delirium were added.

At this ſtage, ſeveral vomited a naſty ſanious matter, tinging the linen, and bed-cloths black. Some had puſtules on the legs, arms, and breaſt, filled with ichorous matter, which degenerated into black putrid ſores.

At laſt, the pulſe failed, the extremities became cold, and the patients, after having been for ſome days almoſt inſenſible of their miſerable ſufferings, generally expired at ſtool, exceedingly emaciated.

In ſome patients, the dyſenteric fever at Bengal, through the whole courſe of the diſeaſe, had regular remiſſions. In others, it was accompanied with a pain in the region of the liver, a tickling cough, and a vomiting of viſcid ſlime. The delirium was never conſtant, the ſenſes and judgment remaining at intervals entire.

The

The duration of the dysentery is various; at Bengal it frequently proved fatal in a few days; at China, if the case was neglected, it seldom exceeded seven or eight; in most places, it was not often protracted beyond the sixteenth day, unless it assumed a chronic form, and then I have seen the disease terminate fatally after a month, and sometimes six or seven weeks.

SECT. II.

Observations on particular Remedies.

I. BLEEDING has been esteemed absolutely necessary in the beginning of most fluxes. When there is a plethora, or when the disease is accompanied with a fever of the inflammatory kind, no evacuation is better calculated for the relief of the patient, or better adapted to restrain the hæmorrhage. But in hot climates, fluxes being either of a chronic nature, or accompanied with a putrid fever, the strength of the patient sinks from the beginning. When blood appears in

in the stools, which, however, is not always the case, there are the most evident symptoms of colliquation, and the greatest tendency in the humours to putrefaction. The hæmorrhage seems rather to be owing to a dissolution, than too great a quantity of the circulating fluids; and the inflammation of the intestines appears to be occasioned by the acrid matter contained in them. To lessen the quantity of blood would only serve to impair the patient's strength, and, if it did not immediately prove fatal, would at least precipitate his fate. I do not remember to have met with above a case or two which seemed to require bleeding; and the operation, though performed early in the disease, did not in the least relieve the patient.

II. The most effectual emetics are either emetic tartar combined with ipecacuanha, or a few grains of the former dissolved in a decoction of tamarinds. This last form was preferred when the patient was feverish. In either of these ways, the medicine not only proves one of

of the most powerful emetics, but, by acting as a purge, relieves the troublesome tenesmus. I never above twice tried the celebrated vitr. cerat. antimon. which, in the first case, did not operate at all, tho' given to the quantity of ten grains, and, in the last, operated very severely. The small quantity of wax contained in that preparation can certainly be of little or no service in the cure. Emetic tartar, being the most certain of all antimonials, ought to be preferred.

Purgatives are of no less consequence in this disease; but at the same time that they ought to evacuate powerfully, they should not stimulate too much. For this reason, the neutral purging salts answer best; and the medicines of this class, to which I have usually trusted, are the sal Glauberi and sal catharticus. In general, I have found the last to operate with more ease than the former. As there is a necessity for frequent repetition of these medicines, they ought to be rendered as palatable as possible; and every addition which alters their easy purgative qualities should

be carefully avoided. Manna, which is very commonly given with these salts, both renders them more nauseous, and makes them gripe much during the operation.

The best correctors of bitter saline purges are cremor tartari, lime-juice, or brandy, which renders them more agreeable to every palate. This is undoubtedly a matter of no small importance, where there is an absolute necessity to continue them for a length of time; besides, in putrid cases, such additions must be conducive to the cure.

The oleum Ricini, when properly prepared, and not grown rancid by keeping, I have found to be one of the best purges in the dysentery. It seems to be possessed of an anodyne quality, frequently easing the painful gripes as soon as taken. It never fails to procure large copious stools, and to relieve the tenesmus.

Rhubarb in large doses, with calomel, for want of other purgatives, has been frequently tried; but, during its operation, the gripes were generally increased, and

and the troublesome tenesmus seldom or never mitigated. In the putrid flux of warm climates, calomel is certainly a very improper addition to any purgative; and repeating it so often as they become necessary in the course of the disease, must certainly add to the septic diathesis, and be productive of bad consequences. This is not a matter of mere speculation, but an observation made from experience. In the Bengal flux, even when the patient has been in a convalescent state, so much has the crasis of the blood been dissolved, that I have seen a few doses of mercury, given for some urgent venereal symptom, not only bring on a troublesome salivation, but likewise a return of the disease.

Although rhubarb purges do not answer in the beginning of fluxes, yet after the disease has continued long, and has, in a manner become chronic, a dose exhibited from time to time, with the intermediate use of strengtheners, often produces the best effects.

In the Bengal flux, when the patients continued long in the convalescent state, rhu-

rhubarb often proved of great ſervice, particularly when five grains of the powder, or a dram of the tincture, was exhibited in a glaſs of wine before dinner; but, in bad caſes, a decoction of bark and caſcarilla was preſcribed at the ſame time.

III. Ipecacuanha in ſmall doſes has been accounted a ſpecific for the cure of the dyſentery. The qualities of cauſing a diaphoreſis, relieving the gripes, and opening the belly, are uſually aſcribed to it. If in warm climates it was really poſſeſſed of them, it would undoubtedly be an ineſtimable remedy. I have frequently tried it, but muſt acknowledge, with very little advantage. A few grains of it will keep up a troubleſome nauſea, but I ſcarcely ever ſaw it relieve the gripes, or occaſion any eaſy ſtool. In the beginning of the diſeaſe, preſcribing it in this manner is only trifling with the patient.

From the failure of ipecacuanha, ſo much celebrated as a principal remedy in cold climates, I have been induced to think, that, by

by long keeping, and by the heat of the climate, it is ſoon totally deprived of its purgative qualities The authority of Piſo, who firſt recommended it in the dyſentery, confirms me in this opinion. He gave it when freſh, and chiefly relied upon its virtues as a cathartic.

But I would not ſeem to infer from this, that ipecacuanha is an uſeleſs medicine in the dyſentery ; when joined with opium, it is one of the beſt aſtringents; and when given with an intention to clear the firſt paſſages, its purgative quality can be reſtored by the addition of a quarter of of a grain of emetic tartar to each doſe. In this laſt form I have often given it with good effects; but when the purgatives already mentioned can be procured, they ought to be always preferred.

IV. The moſt uſual aſtringent medicines preſcribed in the dyſentery are, diaſcordium, philonium, and theriac. or powders of the ſame kind, called ſpecies. In the form of electaries and confections, it is indeed ſurpriſing that any of theſe medicines ſhould ever be ſent out to

warm

warm climates, as they ſoon ferment and ſpoil by keeping. The ſame objection, however, cannot be applied to the ſpecies; but moſt of them are very inelegant farragoes injudiciouſly jumbled together. Theſe antidotes, as they are called, have ſtood the teſt of ages, and have been implicitly preſcribed by one eminent phyſician after another, and their virtues in a manner rendered ſacred; ſo that to treat them with the contempt they juſtly merit, might, perhaps, be dangerous. The baſis of them all, conſiſting of an opiate and aromatic, may be eaſily prepared, when ſuch medicines are judged neceſſary; and the virtues of any of them are much ſurpaſſed by the combination of an opiate with an emetic.

After evacuations, when aſtringents ſeemed to be proper, I have often tried the extract of logwood and the ſemirouba, but have always found them ineffectual medicines. The firſt, although properly prepared, ſoon becomes mouldy in warm weather; neither does the laſt keep well; and, perhaps, it may be in a great

great measure owing to this, that these medicines so seldom answer; but of the whole of this much boasted tribe, the only medicines which I have seen exhibited with any remarkable advantage were opium and ipecacuanha, the decoction of log-wood, bark, and cascarilla. However, in cases which are neglected at first, the effects of them all are very precarious, and most of them, if given too soon, will exasperate the disease.

IV. The Peruvian bark, from its corroborant, astringent, and antiseptic virtues, seems to be well adapted for the cure of this disease, especially when it depends on the same causes which produce remitting fevers. Although it will generally be found to be possessed of virtues far superior to every other astringent, yet it is not near so great a specific in fluxes as in fevers. In the putrid flux at Bengal, no medicine was attended with more wonderful effects. It was found as necessary a part of the cure as evacuations by vomits and purges. At first, the cascarilla was given with great advantage;

but the ſymptoms of putreſcency running high, it was thought neceſſary to combine it with the bark, the latter being of a much more antiſeptic nature. They were firſt given in decoction, and afterwards in ſubſtance, as ſoon as the ſtomach could digeſt them. Yet, in many caſes, the putrefaction was ſo univerſal, and the ſordes in the bowels ſo acrid, that, notwithſtanding the uſe of opiates, the medicine was ſpeedily carried off by ſtool, and the patients, in a manner half corrupted, fell victims to the diſeaſe.

Since that period, I have given the bark in the dyſentery, in the Streights of Malacca, and at China, in the year 1771, without producing any good effects. It ſeemed to aggravate all the ſymptoms, and was never attended with the leaſt advantage till the diſeaſe was overcome, and nothing ſeemed to be wanting to complete the cure, but bracing the relaxed viſcera. Even then, in general, opium, combined with ipecacuanha, and the decoction of log-wood or caſcarilla, anſwered better.

But

But it is by no means ſurpriſing, that the bark ſhould not be found equally efficacious in all dyſenteries, as this diſeaſe is of a mixed nature, and depends upon the epidemic conſtitution at the time. However, it has this advantage above all other aſtringents, that an experiment of its virtues may be tried without any riſk to the patient; whereas a premature uſe of ſome of the others may be attended with fatal conſequences. The greateſt dilemma we are ever under in the exhibition of it is when ſymptoms of putrefaction in fluxes ſeem to demand its immediate uſe, and yet, from the bad ſtate of the ſtomach and bowels, it cannot be retained in ſufficient quantities to be of any ſervice. In ſome of the Bengal caſes, I was induced to believe, that if the bark had been applied by way of fomentation, as recommended by Dr. Alexander * of Edinburgh, it would have proved very beneficial; but the expence and difficulty of procuring it

* Vide Experimental Eſſays by Dr. Alexander, then ſurgeon, at Edinburgh.

in sufficient quantities prevented any experiment of that kind.

SECT. III.

The Cure of the Dysentery.

I. IN the early stage of the dysentery, I have found the following method of cure most effectual. First of all, the emetic powder, N°. 1, was prescribed, which never failed to operate powerfully, and generally relieved both the stomach and bowels.

Next morning, I gave the prescription, N°. 3 or 4, and, unless the pain of the bowels and tenesmus abated, the purge was repeated for the four following days, in such doses as to keep up a free discharge by stool. During this course, the opiate, N°. 6, was taken every night at bed-time. But when the irritation in the rectum was violent, emollient and anodyne glysters gave more relief. For this purpose, I directed from six to eight ounces of a decoction of linseed, or starch, with

with forty or fifty drops of laudanum, to be injected.

If the diſeaſe continued longer, or if aſtringents appeared to be neceſſary, I gave ſmall doſes of ipecacuanha and opium, having recourſe to the emetics and purges from time to time, if the gripes, &c. returned.

In the Bengal dyſentery, the ſame method was followed, only when the diſeaſe was accompanied with fever, the ptiſan, N°. 4, generally anſwered better than the emetic powder; and, in moſt caſes, it was found indiſpenſably neceſſary, both to prevent putrefactions and to reduce the fever, to uſe the evacuating method alternately with the antiſeptic reſtringents, N°. 7.

Any other method of cure I have always found very ineffectual; and unleſs the fever, or ſymptoms of putrefaction, demand the intermediate uſe of other remedies, conſiderable ground is loſt by omitting the purgatives for one day. Theſe continued evacuations may, at firſt ſight, appear hard in a diſeaſe attended

with ſuch ſymptoms of putrefaction and ſo great a proſtration of ſtrength; yet certainly every one acquainted with the matter will readily allow, that a continual fruitleſs ſtraining and painful teneſmus will weaken the patient more in twenty-four hours, than three or four eaſy ſtools procured in the ſame time by a gentle cathartic.

The remedies which will be found to anſwer indiſcriminately in all fluxes are emetics and purgatives. The only objection to this, which I have ever met with, is in the hiſtory of an epidemic flux given by Sydenham, and another at Edinburgh, mentioned in the celebrated Eſſays of that ſociety. But it is to be obſerved, that purges, in the days of that judicious phyſician, were very ſtimulating, and thoſe tried in the laſt caſes conſiſted of rhubarb and calomel. Perhaps, if more lenient purges had been preſcribed, they would have been attended with more advantage.

The uſe of ſaline purges in this diſeaſe was introduced by the judicious phyſicians of the army, during the late wars in Germany.

many. These gentlemen, ſtimulated by the liberal ſpirit of inquiry, made many excellent improvements in the practice of medicine, and their obſervations will continue to merit the eſteem and admiration of the public.

II. The diet ought to be much of the ſame kind with that recommended in the fever; and when the diſeaſe is accompanied with the putrid diatheſis, nothing will be found to anſwer better than ripe fruits, both for opening the belly, reducing the fever, and preventing putrefaction. In the putrid dyſentery at Bengal, when limes could not be procured, I have, with great advantage, added vinegar to the drinks, and never found that this ſharp acid augmented the gripes.

But when the diſeaſe has continued long, or when the patient is in a convaleſcent ſtate, both ripe fruits and vegetable acids ſhould be given ſparingly, as, by their laxative quality, they are apt to bring on a return of the diſorder.

The food ſhould conſiſt of the farinacea, ſuch as rice, ſago, &c. to which wine

 ought

ought to be added freely to support the sinking strength of the patient.

Through the whole course of the disease, the air ought to be kept cool and pure, particularly on board of ship, where many patients are often crowded together; for, unless the apartments are frequently washed, fumigated, and sprinkled with vinegar, it will be in vain to think of removing the disease or to prevent it from becoming general, by the most powerful remedies given internally.

III. During a sickly season, besides avoiding the habitations of the sick, the best method of prevention will be found to keep the body clean, and the belly open by small doses of rhubarb, and to live upon a diet of easy digestion. On the whole, the prophylaxis does not in the least differ from what has been already recommended in the fever.

In the convalescent state, to prevent a relapse, the patient should abstain from all animal food, except light soups. When he begins to recover, a moderate use of such fresh meats as are of easy digestion

may

may be allowed ; and for his greater ſecurity, he ſhould continue the uſe of the Peruvian bark.

When the ſtrength is in ſome meaſure reſtored, the uſe of the cold bath, gentle exerciſe in a carriage, but particularly a change of climate *, are the moſt effectual means to complete the cure.

I ſhall now proceed to illuſtrate the method of treatment, by ſubjoining a few caſes of the diſeaſes mentioned in this chapter.

* Convaleſcents, after a fit of ſickneſs in Bengal, would often be ſuddenly reſtored to health by a ſhort voyage to the coaſts of Malabar or Coromandel. Thoſe who continue valetudinary at Madraſs often recover their uſual health by a ſhort reſidence at China ; or, inſtead of this, they might go to Bengal during the pleaſant and healthy months of December, January, nnd February. The gentlemen reduced by fluxes at China, may take a voyage to St. Helena, or the more delightful ſettlements of the Dutch at the Cape. Such ſhifting of climates would ſave many lives, and may be put in practice when a return to Europe would be very inconvenient.

SECT.

SECT. IV.

Cases of the Bilious Colic.

CASE I.

Madrass, August 12, 1771. Mr. A—, in the afternoon, was seized with shuddering and sickness at stomach. These symptoms were succeeded by intense thirst and violent head-ach. Small doses of emetic tartar were prescribed, which discharged much bile. He passed a restless night, being tormented with violent pains in his bowels and cramps in his legs.

On the morning of the 13th, when I first visited, he was in the greatest agony from stricture and pain about the navel; he was troubled with subsultus tendinum and cramps in his arms and legs. He faltered in his speech, and had totally lost the use of his limbs: his skin was exceedingly hot, his tongue very foul, and he had been costive for three days. After the exhibition of two grains of opium, an

an emollient glyfter, and the application of warm fomentations, the following was prefcribed:

℞ Decoct. tamarind. ℥viii.
Tart. emet. gr. i fs.
Sal. cathart. ℥i. m.
Cap. cochlear. ii. omni behorie donec laxetur alvus.

The firft and fecond dofes vomited him, the remainder purged him frequently, and his ftools were large and bilious. In the evening, his fkin was cool and his pulfe natural; he could ufe his limbs, and was free from cramps and convulfions. but complained of the greateft debility and forenefs in the calves of his legs. A grain and a half of opium were given at bed-time, after which he paffed an eafy night, and fweated plentifully.

In the morning of the 14th, his tongue ftill continued foul, and he complained of pain and ftricture about the navel. A full dofe of the prefcription, N°. 4, was ordered. At ten, a. m. he was feized with violent cramps in his legs and convulfive twitches of his right arm. As the laxa-

laxative had operated three times, a grain and a half of opium was given, which procured him immediate relief. The spasms and cramps returning, it was repeated at bed-time.

On the morning of the 15th, the cramps and convulsive twitches recurred with violence, his skin was hot and dry, his pulse small, and only beat 70 pulsations in a minute; his tongue was clean, and his belly open. The following bolus was prescribed every four hours, with two spoonfuls of the julep:

℞ Mosch.
Sacch. alb. aa gr. xv.
Opii puriss. gr. i.
Conf. card. q. s. f. bol.

℞ Aq. cinnam. ten.
Sp. Minderer. a ℥iii.
Salin. acernat. ʒii.
Syr. simp. ℥i. m.

He continued free from pain in the day; but having omitted his medicines, he had a very severe attack of the spasms at night, which were again removed by the musk and opium.

On the morning of the 16th, he was free from every complaint, except weakness in his limbs and pains in his bones. His medicines were repeated every four hours, which sweated him profusely; and at night, he found himself perfectly easy.

On the 17th, as he was costive, a gentle laxative was prescribed. His complaints totally left him, and he recovered in a few days.

CASE II.

Madrass, August 10th, 1771. Mr. N—, aged eighteen, was seized with vomiting of bile, accompanied with gripes and tenesmus. These complaints were removed by an antimonial vomit, a dose of salts, and an opiate.

On the afternoon of the 18th, his skin was hot, his pulse quick, and his tongue furred. He complained of a fixed pain in his bowels, which, at times, was exceedingly violent. He had a continual pressing inclination to stool, having voided nothing for some days. The emetic,

N°. 1, was given, which operated several times, but without relieving him. Having an utter aversion to a glyster, the following was prescribed:

℞ Decoct. tamarind. ℥viii.
Sal. cathart. ℥i ss. m.
Cap. cochl. ii. singulis horis.

His stomach did not retain the physic, the constipation continued, and during the night he had a pressing inclination to stool every five minutes.

On the morning of the 19th, he vomited a considerable quantity of bile. The pain in his bowels recurring with violence, a spoonful of the oleum Ricini was prescribed every hour, which purged him several times. Six grains of the opiate, N°. 6, were given at bed-time. He rested well in the night.

On the morning of the 20th, he complained of tenesmus, half an ounce of the oil was repeated, which procured him three plentiful stools. He took the opiate at bed-time. His complaints left him, and he soon recovered.

 The

The bilious diseases at Bengal and Madrass * were treated nearly in the same manner; but if the disorder continued longer than six days, it was necessary to have recourse to the bark, to complete the cure.

Cases of the Dysentery.

CASE I.

Culpee, September 11th, 1768. Robert Moat, seaman, was seized with the remitting fever, which, in four days, yielded to the common treatment, but he still continued feeble, and had a return of head-ach at night.

On the 21st, he complained of violent gripes, had a frequent desire to go to stool, but voided nothing but mucus tinged with blood. His tongue was foul, his pulse quick, and he was weak, emaciated, and much dejected. The powder, N°. 1, was given at separate doses, which operated well; and the opiate, N°. 6, was prescribed at bed-time.

* Vid. Part I. p. 12—40.

On

On the morning of the 22d, the gripes and fruitless straining recurred. The purging ptisan, N°. 3, was prescribed, which procured him three copious stools. The opiate was repeated at bed-time. In the night, he purged very frequently, his stools were black and exceedingly putrid.

On the morning of the 23d, the purging ptisan was repeated. After its operation, finding him greatly relieved, the opiate was ordered at bed-time.

On the morning of the 24th, he was free from gripes and tenesmus, but the purging still remained, two ounces of the bark decoction were given with a few drops of laudanum, and repeated every two hours, by the use of which, in a few days, he got well, and returned to duty.

On the 22d of October, he relapsed into the fever, which again terminated in the dysentery. After evacuations, the bark decoction, N°. 7, was prescribed, and he gradually recovered.

CASE

CASE II.

At Culpee, September 7th. Richard Jones, for some days, had been troubled with a diarrhæa, which increasing at last brought on violent gripes and tenesmus. He now complained of continual sickness at stomach, and voided nothing but mucus tinged with blood; his tongue was foul, his skin hot, and his pulse frequent. Four grains of the powder, N°. 1, were given every three hours, which vomited him, and procured several easy stools. In the evening, the opiate, N°. 6, was prescribed.

8th. He purged frequently in the morning; the gripes and tenesmus were severe; he was very weak, and had no appetite. Small doses of ipecacuanha were given every four hours. His complaints continuing, at bed-time an emollient glyster was injected. On the 9th. His pulse was quick, and he complained much of gripes and tenesmus. As the ipecacuanha seemed only to keep up a disagreeable nausea, six drams of the oleum Ri-

cini were prescribed, which procured two easy stools. The opiate was repeated at bed-time, and he rested well in the night.

In the morning of the 10th, the gripes and tenesmus returning, the oleum Ricini was prescribed. His complaints abated, and he had three easy stools. The opiate was repeated in the evening. Having eat an improper supper, he was seized with colic pains, and vomited and purged frequently towards the morning. These complaints continuing on the 11th, half an ounce of the oleum Ricini was repeated. At night, he was easier, and took the opiate.

On the morning of the 12th, the gripes were moderate. Two ounces of the decoction, N°. 7, with eight drops of laudanum, were prescribed every three hours, and he was allowed a pint of port in his rice-gruel. He had only one stool in the day.

I visited him again on the 20th. Having omitted his medicine for three days, his stools were small, exceedingly offensive,

five, and ran off immediately after the gripes. His strength was much reduced, his pulse was frequent, and his skin clammy; he had a continual nausea and slight hiccup. Half the powder, N°. 1, was given, which discharged much bile. Although the opiate was repeated at bed-time, he purged frequently in the night.

On the 21st. The bark decoction was prescribed every two hours, with a few drops of laudanum, and wine was allowed freely. In a few days, the flux left him, and he gradually recovered.

CASE III.

Wampoa, December 1st, 1771. Robert Dawcet, formerly subject to fluxes while in India, for some days past was troubled with a purging, violent gripes, and tenesmus; his tongue was foul, and his pulse natural. The emetic powder, N°. 1, was given at separate doses, which operated well. At bed-time, he had a dose of the opiate, N°. 6.

The 2d. In the morning, the purging gripes and tenesmus returned with great

violence. The ptifan, N°. 2, was prefcribed, which immediately relieved him, and gave him three ftools. At night, the opiate was repeated.

On the 6th, when I vifited him again, although he had taken fmall dofes of ipecacuanha thrice a day, all his complaints were increafed. He faid he had purged fifteen times in the night. His pulfe was 90, his fkin hot, the gripes were very fevere, and his ftools were fmall, bloody, and corrupted; he was much exhaufted, had a flight hiccup, and complained of naufea, and ficknefs at ftomach. Half the powder, N°. 1, was prefcribed, which vomited him twice, and procured him fome large ftools. He was allowed red port in his gruel, and the opiate was repeated at bed-times.

On the 7th. He was free from gripes, his tongue was pretty clean, and his pulfe beat 80. Four grains of ipecacuanha, with a quarter of a grain of opium, were ordered to be taken every four hours.

On the 8th. The purging and tenefmus returned, his ftools were yellow and fmall, but

but without blood; his tongue was still foul, and his pulse rather accelerated. The purging ptisan was repeated, and the opiate at bed-time.

On the morning of the 9th, he was pretty free from gripes, but a slight purging still remained. The boluses of ipecacuanha and opium were repeated, with three ounces of the decoction of log-wood.

On the 10th. He had two stools, and his appetite began to return.

The 11th. He continued to recover, and his stools became feculent. The bark was ordered to be taken every four hours in red port.

On the 20th. He was quite well, and returned to his duty.

CASE IV.

At Wampoa, John Thomas, on the 4th of December, 1771, was seized with a simple purging, which, in a day or two, terminated in severe gripes and tenesmus.

6th. When I visited him in the morning, he complained of pain in his bowels, and had a constant fruitless inclination to

ſtool, voiding nothing but ſlime; his tongue was foul, and his pulſe natural. The powder, N°. 1, was preſcribed, which operated twice; but his complaints remained as violent as ever. The purging ptiſan, N°. 3, was ordered, which procured him three plentiful ſtools. At night he was very eaſy; he took an opiate, and reſted well.

7th. On the morning, the gripes and teneſmus returned, and he had a continual fruitleſs inclination to ſtool. One of the pills, N°. 5, was repeated every four hours, which did not occaſion the leaſt nauſea, but in the afternoon procured him ſeveral ſtools. The opiate was taken at bed-time, and he paſſed an eaſy night.

8th. The purging recurred in the morning, the gripes were eaſy, and the teneſmus was not very urgent. The pills were continued, and he had two excrementitious ſtools. The opiate was repeated at bed-time.

On the 9th. Little alteration could be obſerved. His medicines were continued.

On

On the 10th. He was perfectly free from gripes and tenesmus. Small doses of ipecacuanha and opium were prescribed every four hours. His complaints totally left him, and in a few days he returned to duty.

SECT. V.

Of the good Effects of large Doses of Bark and Opium in the Dysentery.

IN the year 1771, after a tedious voyage * to the coast of Malabar, a putrid dysentery made its appearance on board the True Briton Indiaman. The following observations on the cure were communicated to me by Mr. Robert Foreman, surgeon of that ship.

" After thoroughly cleansing the primæ viæ, I found it the best way to have immediate recourse to the bark, in as large doses as the stomach would bear, with a grain of opium every four hours. This

* The True Briton sailed from St. Helen's, the 20th of April, and arrived at Cocheen the 13th of December, 1770.

method of treatment was owing to the following incident.

"January 14th, 1771. At Onoar, I was ſeized with a colera morbus, which terminated in the dyſentery. A variety of medicines were tried, but in vain. The diſeaſe daily increaſed, my ſtrength was much reduced, and my ſtools became exceedingly putrid.

"On the 29th. I arrived at Bombay, and by the advice of the ſurgeons there, took pills of ipecacuanha and camphor, a medicine in great repute in moſt parts of India. During the uſe of theſe, becoming daily worſe, I was determined once more to preſcribe for myſelf, and therefore took every four hours, two ounces of a ſtrong decoction of bark, with a grain of opium. My drink was port-wine negus, and I eat a pound of grapes in the day. In three or four days, I was ſo much better that my ſtomach could bear a dram of the bark in ſubſtance every four hours; but it was ſtill neceſſary to take the opiate, to prevent it from running off by ſtool. As my ſtrength returned, I gradually

dually left off the uſe of the opium, but continued the bark till I was able to uſe the cold bath.

" Upon my recovery, I was deſired to viſit Mr. —, who came out in the True Briton, and was ſeized with the diſorder in the middle of January; I found him much exhauſted. From the time he landed at Bombay, he had taken nothing but the pills of ipecacuanha and camphor. A doſe of ſalts was preſcribed, and the bark and opium in the ſame way I had uſed them, by which means the diſeaſe was removed in a few days.

" Our joiner, after having been ſeveral weeks in the hoſpital, where he was growing daily worſe, left it, and recovered in little more than a week by the uſe of the bark and opium.

" Above thirty dyſenteric patients were treated in the ſame manner, and I was ſo fortunate as to loſe only one, who, after having had the diſorder a long time, relapſed in the convaleſcent ſtate, and died in a few weeks. But it is neceſſary to remark, that this man had ſuch an

aver-

aversion to the bark, that, although he had been cured by it once, I could never prevail upon him to take it again in any form whatever. Three others, indeed, died of this disease; but, as I did not attend them, bark and opium were not prescribed.

"Till lately, I imagined this was a new method of treating the dysentery; but, in looking over Dr. Morton's works, I find bark and opium were given in as large doses by that judicious physician †.

SECT. VI.

Prescriptions in the Dysentery.

N°. 1. ℞ Pulv. ipecacuan. gr. x.
Tartar. emet. gr. ii.
Dos. a gr. vi. ad xii.

N°. 2. ℞ Decoct. tamarind. ℥viii.
Tartar. emet. a gr. ii. ad gr. iv. m.
Dos. ℥ii. singulis horis.

N°. 3. ℞ Sal. cathart. a ʒvi. ad ℥i ss.
Solve in aq. font. ℥vi.

† Morton. Secundæ Exercitationis Appendix, p. 162.

Et

Et adde crem. tart. vel. succ.
limon. q. s. vel
Sp. vin. Gallic. ʒvi.
Cap. duobus vicibus.

N°. 4. ℞ Ol. Ricini ab ℥ ss. ad ʒx.
Aq. Menth. pip. vel. succ.
limon. ℥ ss. m.

N°. 5. ℞ Pulv. ipecacuan. a gr. viii. ad
xii.
Tart. emet. a gr. i. ad gr. ii.
Syrup. balsam. q. s. forment.
in pil. iv.
Capiat i. tertia vel quarta quaque
hora.

N°. 6. ℞ Opii pur. ℈i.
Sapon. alb. ℈iii.
Syr. com. q. s. m. f. mass. pilul.
Cap. h. s. a gr. iv. ad gr. vi. cum
pulv. ipec. gr. ii. vel iii.

N°. 7. ℞ Cort. Peruv. trit. ℥i.
Cascarill. ℥ ss.
Coque ex aq. font. ℔i. ad ℥ix. &
adde sub. finem,
Cort. cinnam. ℈i.

Gum.

Gum Arabic. ʒiii.
Colatur. adde
Tinct. cort. Peruv. vel
Vin. rub. ℥ii. m.
Dos. ℥ii. secunda quaque hora add. pro re nata aliquot gutt. laud. liquid.

N°. 8. ℞ Pulv. cort. subtilliss. ʒvi.
Cascarill. ʒiii.
Syr. com. q. s. f. elect.
Dos. ʒi. in vin. rub. tertia quaque hora.

N°. 9. ℞ Amyl. pulv. ʒvi.
Aq. font. ℔iii.
Coque ad ℔ii. & adde sub finem coct.
Cort. cinnamom. ʒi.
Gum. Arabic. ℥ ss.
Cola & adde pro re nata
Elix. vitriol. q. s. ad gratam aciditatem.
Capiat pro potu ordinario.

N°. 10. Decoct. Campechens. Pharm. Edinens.

CHAP.

CHAP. IV.

Obſervations on the Caſes of the Fever and Dyſentery.

TO point out a method of cure, and to narrate caſes ſo far only as they ſerve to illuſtrate or confirm any doctrine delivered, can tend very little to improve the ſcience of medicine.

The moſt rational plan to aſcertain the effects of any particular treatment, is to relate, with candour and fidelity, its bad as well as its good ſucceſs. By this means, the practice of medicine would be reduced to ſo many certain facts; the advantages and diſadvantages of different methods of cure would be obvious; and uſeful obſervations would take place of idle ſpeculations.

In the collection of caſes on the remitting fever, I have inſerted all thoſe which terminated fatally.

When the ſecond caſe occurred, altho' I had given the Peruvian bark to ſeveral

patients, when no remissions of fever could be procured, yet, at that time, I had not sufficiently experienced its safety in continual fevers unaccompanied with symptoms of putrefaction. Every other method was tried, and the case proved unsuccessful. In the two other cases, N°. III. and XII. the patients had such an aversion to the medicine, that they could not be brought to use it. From all these cases it appears how little dependence can be put upon any other method of cure.

The case, N°. VI. points out the dangerous consequences of neglecting proper evacuations in the beginning of fevers, in unhealthy situations, and, at the same time, shews how necessary they are to prepare the patient for the cure by Peruvian bark.

Before the case, N°. XVII. occurred, from the great success I had in fevers, I was almost led to believe, that the bark, when timely exhibited, was a certain remedy in the cure of fevers in hot climates. Although one unsuccessful case can never detract from the more general virtues of any

any medicine, yet it serves to prove, that we are not possessed of a never-failing specific in any distemper.

From all the other cases in the collection, the virtues of the bark, whether exhibited in the remissions or exacerbations of fever, are very evident.

As it has been my endeavour merely to represent facts, I shall draw no farther conclusions from the cases; but must add that I have given the bark to one hundred and fifty patients in fevers, at Bengal and other places in the East Indies, besides to several others whose cases were not registered, and out of that number, lost only one who took the medicine.

Amongst a number of patients afflicted with the Bengal dysentery, I lost four. Two of them were much reduced by preceding fevers before I visited them; another, as he had the greatest aversion to every purgative, was prescribed small doses of ipecacuanha. The bark and every other medicine was tried, but all to no purpose, and he died on the forty-second day of the disease.

Since

Since that period, I have had about fifty-eight patients in the dyſentery, whoſe caſes were daily regiſtered. All of them recovered by the method of treatment already laid down in the chapter on the Dyſentery; but it is proper to obſerve, that I had the management of the patients from the beginning, and of courſe had time to make the neceſſary evacuations before the ſtrength was reduced.

I have added an account of the number which died in all the ſhips at Culpee, during the ſickly ſeaſon, 1768, with a view to compare the ſucceſs of different management.

Moſt of the ſurgeons who practiſed at Bengal bleeded in the beginning of all fevers, and never gave the bark but in diſtinct remiſſions; and, indeed, the ſmall quantity of it carried out in the medicine cheſts put it out of the power of any of them to preſcribe it freely.

One of the ſhips ſailed from England in January, 1768, and arrived at Culpee the 24th of June. Although ſhe left Bengal in the beginning of September, during the

the rage of ſickneſs, out of the ſhip's company, which conſiſted of one hundred and nine men, eight died at Bengal, and three during the voyage.

Another ſhip, with one hundred and thirteen men, although the ſickneſs was not general on board, loſt ſeven in Auguſt and September, and during the voyage ſeven more died.

Another ſhip, with one hundred and eight men, loſt ten during the ſickly ſeaſon at Bengal, and four in the voyage.

The Saliſbury, one hundred and three men, enjoyed almoſt a total immunity from ſickneſs. Two of her men died at Culpee, and two during the voyage.

Another ſhip, with one hundred and ſeventeen men, loſt thirteen at Bengal, and four during the voyage.

The Ankerwyche lay at Calcutta, and only one man died. Next year ſhe was anchored at Culpee; the ſhip's company conſiſted of one hundred and one men; although ſhe failed from Bengal the 17th of October, thirteen died, and eight during the voyage.

Of all the ſhips which were in Bengal, the Dutton and Talbot agreed in moſt circumſtances. They remained at Culpee all the ſickly ſeaſon, and were equally viſited by diſeaſes; they were much about the ſame time out at ſea, and were off the Cape of Good Hope in the ſame ſtormy weather. The crew of the Dutton conſiſted of one hundred and ſeventeen men; ſixteen died at Culpee, and twenty-four during the voyage. The Talbot had on board one hundred and eight men; eight died at Culpee, and three in the voyage.

In juſtice to the method of cure, I muſt obſerve, that, out of the number who died on board the Talbot, one was carried off by a ſuppuration of the liver at the hoſpital, and other two by a flux. As I did not attend them, I do not know how they were treated. The three who died at ſea were carried off by abſceſs in the liver, the conſequence of neglected fevers.

Out of eight hundred and ſeventy-ſix, the compliment of men carried from England on board eight ſhips, ſeventy-eight died at Bengal, and fifty-five at ſea; a mor-

a mortality which, I apprehend, never would have happened, had the bark been freely prescribed, and a proper regimen allowed the sick.

CHAP. V.

Observations on the Hepatitis, or Disease of the Liver.

IN hot climates, of all the viscera in the human body, the liver is most subject to disease. It suffers from obstruction, inflammation, and suppuration.

The disease of the liver is very common over all India, but particularly on the coast of Coromandel. As the disease sometimes attacks in perfect health, and sometimes is the consequence of preceding sickness, it may, with great propriety, be divided into original and symptomatic.

When the disease is original, it is generally accompanied with an uneasy sensation of weight under the right hypochondrium, and, for the most part, with a very sharp pain about the clavicle or shoulder of the same side. As the disor-

der increaſes, the countenance becomes yellow, the patient complains of ſickneſs or oppreſſion at ſtomach, difficult reſpiration, and uneaſineſs when he lies on the oppoſite ſide.

Although theſe are the common characteriſtic ſymptoms of the diſeaſe, yet, ſo inſenſible is the liver, that ſuppurations have been found, on diſſection, when there have been no reaſons to ſuſpect inflammation or any other diſeaſe of this organ. Therefore, it frequently happens, that the diſeaſe is fixed, and often incurable, before any alarming ſymptoms have appeared. The yellow colour which accompanies the diſeaſe, is alſo precarious, as no cauſe which does not obſtruct the paſſage of the bile into the duodenum, occaſions a jaundice; however, in all the the caſes which have fallen under my care, the countenance became remarkably ſallow, and had a tinge nearly reſembling a lead colour.

The diſeaſe of the liver has the greateſt tendency to impoſtumation. When the abſceſs points outwards, and the matter

is

is diſcharged by inciſion, the patient has ſome chance of recovery; but when it burſts into the cavity of the abdomen, or into that of the thorax, by an adheſion of the liver to the diaphragm, the caſe will almoſt certainly prove fatal.

In cold climates, the cure, as in all other inflammations, depends upon plentiful bleeding, antiphlogiſtic purges, and the application of a bliſter to the part affected.

But in the Eaſt Indies, this method being found unſucceſsful, and the diſorder in general proving ſoon fatal, the moſt experienced practitioners in that part of the world preſcribe mercury as a ſpecific. They apply it externally upon the part, and give it internally in ſuch doſes as to excite a gentle ſalivation. When it produces this effect before the matter is formed, it will generally be found the moſt certain and expeditious cure. But there is no doubt that the ſucceſs of mercury is greatly exaggerated. It is ſo faſhionable a remedy, that it is preſcribed in ſlight affections of the liver, which, in all probability, might have yielded to

once or twice bleeding, the repetition of gentle phyſic, and the application of a bliſter.

I have only had an opportunity of ſeeing the diſeaſe, when original, in ſix patients. One caſe was remarkable for a tickling cough, difficult reſpiration, and irregular exacerbations of fever. On the ſixth day, his countenance grew very yellow; he had frequent ſickneſs at ſtomach, with a reaching to vomit, and pain about the right clavicle, particularly when the ſeat of the liver was preſſed. He was blooded, had a bliſter applied, and took ſeveral doſes of ſoluble tartar *. On the eighth day, his fever abated, the painful ſymptoms left him, but his countenance remained ſallow, and he was exceedingly emaciated. An infuſion of camomile, with ſalt of tartar was preſcribed every three hours †. He continued open in the belly,

* No. 1. ℞ Mannæ ℥i.
Tart. ſolub. ℥ ſs.
Aq. fontan. ℥ vi.
Capiat duob. vicibus.

† No. 2. ℞ Flor. Chamæm. ℥ ſs.
Sal. tart. ʒii.

Aq.

belly, made his urine copiously, and soon recovered.

The other cases which occurred resisting the common treatment, and the patient's being able to bear mercury, on the fourth or fifth day of the disease, two grains of calomel, made into a bolus with conserve of roses, were prescribed twice a day, sometimes with an opiate in the night-dose, to prevent its running off by stool †. As soon as the mouth became affected the medicine was omitted, and although a salivation was by this means avoided, yet, in all of them, the cure was completed in a fortnight or three weeks. During this course, if the respiration became difficult, or the pain in the side more violent, it was necessary to take a few ounces of blood, or to apply a blister.

Aq. fontan. bull. ℥viii.
Infunde per quatuor horas et cola.
Capiat ℥ii. tertia quaque hora.

† No. 3. ℞ Calomel. gr. ii.
Pil. saponac. gr. x. m.
Form. in pil. No. ii.
Capiat h. s.

When the diſeaſe of the liver is the conſequence of obſtinate fevers and fluxes, it is attended with the putrid, and not with the inflammatory diatheſis; mercury would be improper, and every other method of cure will be found very ineffectual, as will appear from the following caſes.

I. On the 8th of October, 1768, I was deſired to viſit Mr. C—, at Calcutta, who had been ſeized with the putrid remitting fever in the beginning of September. When I ſaw him, he was exceedingly emaciated, his pulſe was frequent, his breath offenſive, his countenance ſallow, and he was now and then ſubject to hæmorrhage from the noſe. But what gave him moſt uneaſineſs for ſeveral days paſt was a weight in the ſeat of the liver, and a ſharp pain about the right clavicle. In theſe circumſtances, a German ſurgeon had preſcribed mercurials and a decoction of ſarſaparilla. Judging theſe improper, they were laid aſide, a bliſter was applied to the part, and a gentle laxative, with ſoluble tartar, was preſcribed.

On

On the 10th, the pain of the clavicle was removed, the blister discharged well, but the exacerbations of fever returned at night, with an increase of the pain under the right hypochondrium. As he had taken no bark during the course of his fever, and as the hæmorrhage from the nose increased, it was prescribed in strong decoction with the saline draughts.

From this to the 18th, the symptoms were rather flattering, the hectic fever was diminished, and he was able to sit up. The uneasy sensation continued in his side, although no prominence could be observed; but his weak habit of body still deterred Mr. Hamilton*, who was then called in, and me from giving him mercury.

On the 19th, he was seized with a tickling cough, had very difficult respiration, and could not bear the region of liver to be pressed. At night, after an attack of rigors, he vomited up a considerable quantity of white fœtid matter; the cough and expectoration continued, his countenance became exceedingly ghastly,

* Surgeon at Calcutta.

ly, he gradually ſunk, and in three or four days died.

The body was not ſuffered to be opened; but there is no reaſon to doubt that the ſuppuration of the liver terminated as in the following caſe.

II. Joſeph Patington, a man of a ſtrong robuſt conſtitution, in the beginning of October, 1768, was ſeized with the dyſentery at Culpee. Having an averſion to medicines, and truſting to his former good health, he not only neglected every proper precaution, but lived very irregularly.

In the end of November following, the dyſentery left him, and he was ſeized with an intermitting fever. Having alſo neglected this diſeaſe, it changed its type, became continual, and was accompanied with ſymptoms of putrefaction. Bark was now taken, but the fever was not totally removed by it.

On the 10th of February, 1769, when I viſited him, he complained of a very acute pain in the top of the right ſhoulder. The ſeat of the liver was examined,

but no external fullneſs could be perceived, but he was ſenſible of a dull-heavy ſenſation in the part. He was much exhauſted; his countenance was yellow, his pulſe was always frequent, and his fever increaſed at night. A bliſter was applied to his ſide, and the pain in his ſhoulder diſappeared.

On the 11th, the pain of the clavicle returned, and the feveriſh paroxyſms encreaſed at night. A decoction of bark, with a little tartarus ſolubilis, was preſcribed. The ſymptoms remaining the ſame, and the weak ſtate of his body forbidding any ſtrong deobſtruent, ſaponaceous medicines were preſcribed †.

For the following ten days, he ſeemed to be greatly relieved; the pain in the ſhoulder left him, and the dull ſenſation under the right hypochondrium gave

† No. 4. ℞ Sapon. Venet. ℈ii.
Pulv. Rhub. gr. x.
Syr. ſimpl. q. ſ.
F. maſſ. in pil. xii. dividenda.
Capiat iv. ter die, ſuperbib. cyath. infuſ. No. 2.

him

him little uneaſineſs. The pills were continued, only the quantity of rhubarb was diminiſhed, as they purged him.

In the beginning of March, his countenance was very yellow. The pain in the ſeat of the liver became very ſevere, and was accompanied with oppreſſion at ſtomach, and difficult reſpiration. Theſe ſymptoms encreaſing, on the 21ſt, he expectorated near a pint of ſanious matter.

On the 28th, a purging was added, and he complained much of ſourneſs in his ſtomach. Large doſes of the teſtacea were given, but to no purpoſe, and he died on the 3d of April.

Upon diſſection, the liver appeared ſound on its ſurface; but the right lobe extended higher up than uſual, and adhered ſtrongly to the diaphragm. At this part, an abſceſs was found, which contained a conſiderable quantity of purulent matter. Its ſhape nearly reſembled that of the human heart, and the matter made its way through the diaphragm at the adheſion, which eaſily admitted the finger. The gall-bladder was full of bile; the ſpleen

ſpleen was a little enlarged, and the ſtomach was ſmall and empty.

Upon inſpecting the cavity of the thorax, the light lung was waſted and adhered to the diaphragm, and the purulent cavity from the liver ran up ſeveral inches into the ſubſtance of that lung. No other remarkable morbid appearance was obſerved.

III. On the 20th of June, 1771, I was deſired to viſit a German belonging to a country ſhip, lying at the iſland of Johanna. The veſſel had been trading at Delagoa three months before, when a fever of a bad kind raged there, and proved fatal to numbers. All the Europeans that now remained were the captain, and chief mate juſt recovering from weakneſs occaſioned by his fever, and the ſecond officer, who had ſuffered much by the ſame diſeaſe, in the following miſerable plight.

He was confined to his bed; all the abdomen was much ſwelled, particularly under the right hypochondrium, but he ſaid that part was much ſubſided during the laſt fortnight.

A surgeon belonging to one of our East Indiamen, about three weeks before I saw him, had prescribed for him; he had taken small doses of calomel, and had a mercurial plaster applied to his side. When the plaster was removed, the integuments over the sixth, seventh, and eighth ribs, were swelled, œdomatous, and painful to the touch. When he was turned to the opposite side, he complained of suffocation, and a quashing of matter in the thorax could be distinctly heared. He constantly laboured under difficult respiration, and continually coughed, and expectorated a frothy purulent matter to the quantity of two quarts in the twenty-four hours.

In this way he had passed the last fortnight; from a strong healthy man, he was reduced to a mere skeleton, and all his hopes were an ardent wish for death to put a period to his complicated distress.

It was proposed, in order to give him some relief, to make a puncture betwixt the ribs; but, as we were to sail next day, he would not consent to so precarious an operation.

I was informed by a medical gentleman who viſited this patient a few days after I left him, that a mortification had begun betwixt the ſixth and ſeventh ribs, and that his whole ſide was emphyſematous; with ſeveral livid ſpots. At that time, he ſtill continued expectorating purulent matter in great abundance, and had every ſymptom of approaching death.

Another patient, who ſuffered much from the fever and flux during the ſickly ſeaſon in 1768, relapſed into the diſeaſe of the liver, to which he had been formerly ſubject. Mercury was preſcribed; however, the diſeaſe terminated in ſuppuration, and he died in a month after he began that courſe.

In a caſe which occurred at Bengal, where I attended along with Mr. Steel, ſurgeon of the Saliſbury, the abceſs was remarkable for being ſituated near the ſpine. The tumor pointing outwards, about a pint of thin fœtid matter, was diſcharged by inciſion. For two months after the operation, the patient recovered daily, and was able to follow his uſual em-

employment; but ſoon after this, the ulcer put on an unkindly appearance, the diſcharge became more profuſe, and ſymptoms of freſh ſuppurations took place. The bark, joined with pectorals, was preſcribed. This and every other method proving ineffectual, he died tabid in ſix months.

From the foregoing caſes, it evidently appears, that putrid fevers, when allowed to run out for any length of time, frequently terminate in abſceſs of the liver; and hence we may ſee the neceſſity of exhibiting the bark early, in order to prevent this dangerous conſequence.

CHAP.

CHAP. VI.

Observations on the Scurvy.

THE scurvy being a disease so destructive to seamen in long voyages, many eminent physicians have exercised their invention to discover the most effectual means to retard its progress, or lessen its fatality.

Amongst the proposals hitherto offered, those of the judicious Dr. Lind and the author of the Tutamen Nauticum have been found to answer best upon experiment. The antiscorbutics recommended by the last author* are cheap and elegant,

* This ingenious author, among many useful antiscorbutics, recommends the inspissated juice of turnips: water-dock, bullace, sloes, wild plums, hips, elder-berries, or crabs, either preserved in coarse sugar, or made into a rob by boiling their expressed juices. Apples, pears, and fruits may be preserved in the same manner, or may be dried in slices without losing their flavour. Good wine is made by fermenting the above extracts with water and sugar. Vide Tutamen Nauticum.

and yielded ſpontaneouſly by all the woods and hedges in Great Britain.

But of late no propoſal has inſpired greater hopes of ſucceſs than the malt infuſion recommended by the ingenious Dr. Macbride. His theory, concerning the operation of vegetables, and the manner in which they cure the ſcurvy, is founded on the moſt plauſible principles, and is ſupported by ſeemingly concluſive experiments made out of the body.

If the malt infuſion was found to anſwer in practice, the diſcovery would be highly important. It therefore merited the moſt fair and candid trial; and its effects ought to be related with the greateſt fidelity, in a matter which ſo nearly concerns the public welfare.

This conſideration has induced me to ſubjoin the following caſes, in which the wort was tried at ſea, without having any effect, either to remove the diſeaſe or to check its progreſs.

The malt made uſe of in the following caſes was perfectly ſound; it was freſh-ground every day, and the infuſion made

in

in the proportion Dr. Macbride directs. But it is to be obſerved, that malt, after it has been kept a few weeks at ſea, loſes, in ſome degree, its ſaccharine taſte; however, it readily fermented, and when ſugar was added nearly reſembled freſh wort made in England. The malt uſed in theſe caſes, as it was very carefully packed, muſt have ſuffered as little from keeping as that on board the * Jaſon, in a voyage to the Falkland Iſlands, and which given with ſo much ſucceſs in her was return to England.

CASE I.

Joſhua Chriſtian, a young man of an active diſpoſition, on the 23d of June, 1769, was confined below by the ſcurvy.

* The Jaſon ſailed from England the 25th of October, 1765. She left Port Egmont the 18th of January, and arrived in the Downs the 20th of March, 1767. There was no opportunity of trying the effects of the wort till February, 1767. Vide Poſtſcript to Dr. Macbride's Eſſays, 2d edit.

For ſome time before, he ſaid, he had been troubled with liſtleſſneſs and weakneſs of his knees; and that he became breathleſs and faint when he attempted to go aloft. His gums were ſwelled, ſpongy, and bleeded on the leaſt touch; his legs and arms were covered with ſmall livid ſpots, not riſing above the ſurface of the ſkin; and his belly was coſtive. He was diſcharged the uſe of ſalted proviſions, and was allowed tea and ſugar for breakfaſt, and boiled rice, with wine, for dinner.

25th. A purging ptiſan was preſcribed, and he was ordered to waſh his mouth frequently with an aluminous gargle.

26th. The ſymptoms continuing, a pint of freſh wort, made into panado with ſugar and powdered biſcuit, was given twice a day.

On the 27th. No alteration could be obſerved; his belly was regular, and therefore the wort was increaſed to two quarts.

On the 28th. His gums were more firm; he complained of tightneſs in his breaſt, and found his knees weaker, when he attempted to walk.

July 3d. His countenance began to look ſallow, his teeth were looſe, and the ſcorbutic ſpots of a worſe colour. As the wort did not purge him, it was increaſed to three quarts.

7th. The weather being wet*, cold, and ſtormy, notwithſtanding he continued the uſe of the wort regularly, his diſeaſe began to make rapid progreſs. His gums were livid, his breath was very offenſive, and he was faint upon the leaſt motion; the ſcorbutic ſpots were much broader, and of a worſe hue; his hams were diſcoloured; and he complained of flying pains in his arms and legs. The gargle was repeated with tincture of myrrh; fomentations were uſed; and he took two quarts of the wort in the day.

13th. The tendons of the hams were hard and ſtiff, his legs were diſcoloured with purple vibices, and his arms, breaſts, and cheeks covered with ſmall livid ſpots. He had now and then a ſlight hæmorrhage from the noſe; he was greatly dejected;

* For an account of the weather, vide p. 20, & ſeq.

and when he moved out of his hammock, he was ready to faint.

Being now fully convinced of the inefficacy of the wort, two spoonfuls of lime-juice were given thrice a day; he was also allowed a pint of red port in his boiled rice, and had tea and sugar for breakfast.

20th. Little or no alteration could be observed. As the lime-juice was now finished, half a pint of mango-shrub, mixed with water, and sweetened with sugar, was ordered to be taken daily.

On the 1st of August, when we arrived at Madagascar, he was very weak and exhausted, and it was the 23d before he was capable of doing the least duty, although he was plentifully supplied with oranges and nourishing vegetable soups.

CASE II.

John Trott, on the 23d of June, 1769, complained of pains in his knees, great weakness, and troublesome tightness on his breast when he used any strong exercise. His countenance was bloated, and his

his legs were covered with ſmall red ſpots; his gums were livid, but did not bleed much.

On the 24th. Being coſtive, a gentle purge was preſcribed; and at night, as he complained of flying pains all over his body, he was ſweated with camphor and nitre.

On the 25th. He began the wort with the other patient, and increaſed it to three quarts in the day.

July 3d. He was able to return to duty; the tightneſs on his breaſt gave him little trouble; but the purple ſpots remained as before. The wort was perſiſted in regularly; and I was highly pleaſed, imputing this change to its effects.

On the 7th. He was obliged to confine himſelf below; his legs were more thickly covered with purple ſpots; his hams were ſtiff and very painful, and his legs began to ſwell towards night; he complained much of difficult breathing, and was tormented with flying pains in his arms, ſhoulders, and back. At night, he was

ordered a bolus, with camphor and guaiac, and after it a pint of warm wort, ſweetened with ſugar.

The 8th. Being coſtive, he had a purge, and two quarts of wort were continued daily.

On the 12th. His gums were ſpongy, and bled on the leaſt touch, and ſeveral vibices, reſembling contuſions, were obſerved upon his legs. In the afternoon, he had a ſlight hæmorrhage from the noſe.

13th. He was now very feeble and faint, and being tired of the wort, it was diſcontinued. He was ordered to live upon tea, ſugar, and boiled rice, with wine, and a ſpoonful of lime-juice was given thrice a day. However, he became daily worſe till we arrived at Madagaſcar, where, in eight days, he recovered from all ſcorbutic ſymptoms, except weakneſs.

CASE III.

Adam Wallis, ſeaman, on the 4th of July, complained to me of a ſore in the right tibia. When I examined it, I found it to be a foul ſcorbutic ulcer; it was livid,

livid, painful, and bled on the leaſt touch. He had no other ſcorbutic ſymptom, except the uſual inactivity and ſallow complexion, which generally accompany the diſeaſe. When I enquired into his former ſtate of health, he ſaid, that he had been frequently ſcorbutic, and that, ſome years ago, he had received a gun-ſhot wound in the tibia, where the ulcer appeared at preſent; and that it had frequently broke out at ſea, when he made long voyages.

He was ordered to foment his leg with warm water and vinegar; the ulcer was dreſſed with equal parts of mel Ægyptiac. and baſilicon, and the wort was preſcribed as in the foregoing caſes.

For the following eight days, he uſed the wort regularly, and was very fond of it; however, it produced no other effect than to keep him regular in the belly.

On the 12th. The whole limb was monſtrouſly ſwelled, very painful, and livid in ſeveral places. The ulcer was very putrid, bled more, and the fungus could not be kept down by compreſ-

ſion.

fion. About two inches below the first, another ulcer began to appear, the edges were callous, and it bled considerably. His gums were now spongy, he was feeble, and scarcely able to walk. His leg was bathed with warm vinegar, and anointed with a camphorated liniment; the ulcers were dressed with lint, dipped in a strong tincture of bark, acidulated with spirit of vitriol; and the following was given three times a day:

℞ Succ. limon. ℥i.
Pulv. cort. ʒi.
Syr. simp. ℥i. m.

By this course, which was continued till the 20th, the progress of the disease seemed to be checked.

On the 21st. The lime-juice being finished, he was ordered to have recourse to the wort again. He wasted in his flesh, the ulcers became more putrid, bled much when dressed, and the tendons of his hams were stiff and discoloured.

On the 27th. The wort was discontinued, and he was ordered three drams of bark in the day. His diet was tea and

 sugar,

ſugar, and he was allowed wine; however, the diſeaſe encreaſed till we arrived at Madagaſcar.

CASE IV.

John Marſhal, ſeaman, in the beginning of June, 1768, began to be afflicted with the ſcurvy; however, he continued to do his duty, and concealed his complaints as long as he was able to ſtand the deck.

On the 6th of July. His gums were rotten, bled conſiderably, and prevented him from eating any thing ſolid. He complained of great feebleneſs when he attempted to walk, and was tormented with very ſevere pains in the joints of his knees, arms, and in his back. Upon examining his body, I found both his legs covered with black livid ſpots, and the right ham was conſiderably ſwelled, hard, and covered with yellow blotches. He had been coſtive, and at times bleeded ſlightly from the noſe. Proper external applications were ordered, and a gentle ſudorific was preſcribed at bed-time. His diet

diet was tea and ſugar, and boiled rice, with wine.

On the 7th, he had a purge, which operated eaſily; and, on the 8th, he began the wort, as in the preceding caſes.

On the 18th. All the ſcorbutic ſymptoms were much aggravated; his right leg was monſtrouſly ſwelled, painful, and diſcoloured; the hæmorrhage from the noſe was more profuſe; and he was much dejected. The ſcorbutic ſpots were of a worſe colour; and the muſcles of his arms were indurated in ſeveral places.

The fomentations were continued, which always gave him ſome temporary eaſe. He was ordered an ounce of the tincture of bark, with as much lime-juice, ſweetened with ſugar, three times a day; and, inſtead of wort-panado, his diet was rice-gruel, boiled rice, ſugar, and wine.

The 26th. Although the ſcorbutic ſymptoms remained, yet he ſeemed to have loſt little ground. The lime-juice being finiſhed, the ſame quantity of mango-ſhrub was allowed as in the firſt caſe.

He became daily worſe, and on the 29th, was ſo weak and faint, that his

life was despaired of; but getting a view of Madagascar, the hopes of being soon ashore raised his sinking spirits.

On the 1st of August. He was supplied with oranges and vegetable soups.

On the 6th. He was sent on shore; but, for several weeks, he continued weak, and was subject to slight hæmorrhages from the nose.

On the 3d of September, every scorbutic symptom was perfectly removed; he was plump, fat, and healthy, only the tendons of his hams remained contracted. This complaint was also removed in a fortnight, by the steams of warm water, emollient liniments, and mercurial physic.

The malt infusion was given to two others ill of the scurvy. The symptoms increased daily, and therefore it was not so long continued as in the above cases.

All the others sick of the scurvy were ordered to take the usual medicines which are given at sea, calculated, indeed, only to amuse, or at most to palliate some par-

ticular

ticular ſymptoms; the principal of which were, gentle purges when coſtive, bitters with elix. vitriol. fomentations, and antiſeptic gargles.

As there was no live ſtock on board, the ſick had no aſſiſtance from freſh meat. Their diet was tea, ſugar, boiled rice, and wine.

Although the wine and ſugar undoubtedly preſerved the lives of many of the ſick, by ſupporting their ſtrength, yet at length, they ſeemed to have no effect to check the violence of the diſtemper; and many would have inevitably died, had the voyage been protracted a few days longer.

The wort had alſo a fair trial on board the True Briton Indiaman. The following obſervations on its effects were communicated to me by Mr. Foreman, ſurgeon of that ſhip.

CASE V.

"November 18th, 1770. Aaron Wiſdom, one of the company's recruits, complained of great laſſitude and pains all over his

his body. His gums were ſwelled, ſpongy, and bled upon the ſlighteſt touch, and his breath was exceedingly offenſive; his legs were œdematous and diſcoloured, with large livid and yellow ſpots, and his whole body was covered with miliary eruptions. As he was coſtive, an infuſion of ſenna, with cremor tartari, was ordered to be taken next morning.

" 19th. His phyſic procured him four ſtools.

" 20th. He took a pint and a half of the wort.

" 21ſt. The ſymptoms increaſed, he was faint on the leaſt motion, was greatly dejected, and obliged to confine himſelf to his hammock. He continued the malt infuſion, and had one ſtool in the evening.

" 22d. He complained of great giddineſs when he raiſed his head in his bed. The muſcles of his legs and arms were indurated and diſcoloured in ſeveral places. Fomentations were preſcribed, and the wort was continued.

" 23d. The wort was increaſed to three pints, which procured him one ſtool.

" 25th. The swelling of his gums increased, and his breath became very fœtid. An astringent gargle, with elixir vitr. was prescribed.

" 26th. All the symptoms worse.

" 27th. He was costive for three days past. The purge was repeated and the wort continued.

" 29th. He was weak and very much dejected.

" 30th. A large fungus separated from his gums, and he lost three-quarters of a pint of blood. A strong decoction of bark, with alum, was prescribed as a gargle.

" December 1st. His symptoms still encreasing, he, with great difficulty, was persuaded to continue the wort.

" 3d. The fungi of his gums were much increased. Being costive, the purge was repeated.

" 5th. His legs were very painful and much indurated; and he was so weak, that it was dangerous to move him out of bed. He now absolutely refused the wort; he was allowed sago, lime-juice, sugar, and a pint of wine in the day.

The

The scorbutic symptoms still increased. On the 26th, we arrived at Tillicherry. He was sent ashore, and died at the hospital."

CASE VI.

" November 18th, 1770. Messenger, one of the company's recruits, complained of pain and swelling in his legs, which were covered with several large livid spots; his gums were also swelled and spongy, and he was weak and faint on the least motion.

" On the 19th. He had a gentle purge.

" 20th. He had a pint and a half of the wort.

" 21st. Much the same, only his legs were very painful. Fomentations were applied, which gave him some relief, and the wort was continued.

" 22d. The symptoms continue to increase.

" 23d. He took three pints of the wort; but he complained that it made him sick.

" 24th. He took the same quantity, which sat easier upon his stomach.

 " 25th.

"25th. The fungi on his gums were greatly encreased. An antiseptic gargle, with elix. vitr. was ordered; he continued the wort, and had three purging stools, which brought on great dejection of spirits and faintness on the least motion.

"29th. Being costive, a purge was given in the morning.

"30th. He began to nauseate the wort, which, however, was continued.

"December 1st. All the symptoms much worse; he had one stool.

"2d. I could scarcely prevail upon him to continue the use of the wort.

"3d. He had three stools.

"4th. He was exceedingly low, and complained much of his mouth.

"5th. His mouth was rather easier.

"6th. He left off taking the wort, and the disease continued to encrease till we arrived at Tillicherry.

"It is necessary to observe, that these two patients, whose cases are related, had boiled sago and sugar, and for dinner fresh meat from the captain's table; when they

they gave over the wort, they were allowed lime-juice and a pint of red wine daily.

" Four patients more were put upon the uſe of the malt infuſion; all of them, however, gave it over ſooner or later, without receiving any benefit from it.

" On the 13th of December, we arrived at Cocheen. The ſcorbutics were plentifully ſupplied with freſh meat and vegetables; however, all of them, except ſuch as were ſlightly affected, grew daily worſe till the 26th, when they were ſent aſhore at Tillicherry."

Having no favourite hypotheſis to ſupport, I have related the effects of the malt infuſion, both in the caſes which have come under my own obſervation, and ſo far as I could depend upon the intelligence received from others.

I am very ſenſible that the caſes which are here given, differ very widely from thoſe related by others; yet I would eſteem myſelf wanting in duty to the public, had I concealed them. However,

as the malt infuſion has been ſupported by very ſtrong inſtances * of its having cured the diſeaſe, it may ſtill ſeem to merit ſome farther trial †.

In our return from St. Helena to England, in the year 1769, I had an opportunity of trying the effects of bark and rob of oranges in two ſcorbutic patients. It is, however, neceſſary to remark, that they had the benefit of a freſh diet, and that the ſhip was much more clean and pure than when ſhe was off the Cape of Good Hope.

* Vide An hiſtorical Account of a new Method of treating the Scurvy, &c. by Dr. Macbride.

† In experiments of this kind, it is much to be wiſhed that patients were ſelected for comparative trials. In the four caſes which occurred on board the Jaſon, have we not ſome reaſon to ſuſpect that the virtues aſcribed to the malt infuſion depended on the uſe of external applications, but particularly on the nouriſhing diet allowed to the ſick, ſuch as portable ſoup ſeaſoned with ſhallots or garlick, the rice and currrants, the ſago or ſalep, with Madeira? Had two of the patients been put upon theſe articles only, and two upon the regimen and the wort, its effects might have been more preciſely aſcertained.

I. John Perkins, formerly ſubject to the ſcurvy, on the 7th of December, after eating a hearty ſupper, was ſeized with an epileptic fit, accompanied with difficult reſpiration, and violent agitations of his body; the pupils of his eyes were dilated, and did not contract when a candle was brought near them. Every method was attempted to bring him out of the fit; he took an emetic, and was blooded to eight ounces; he was ſupported with wine, but lay comatoſe and ſenſeleſs during the night.

8th. He was ſtill comatoſe and ſenſeleſs; but at night he communicated his complaints by an application of his hand to his belly. A glyſter was adminiſtered, a bliſter applied betwixt his ſhoulders, and a draught, with ten grains of muſk, preſcribed every four hours.

9th. About mid-day, he returned to his ſenſes, and recovered the uſe of his ſpeech; he complained of confuſion in his head, and a numbneſs in his right arm; his gums were ſpongy, and ſlightly ulcerated; and on examining his legs,

 they

they were found œdematous and covered with red and black spots. The musk draughts and wine were continued, and in a few days he returned to duty.

On the 25th. He complained of the greatest faintness; his legs were swelled, painful, and discoloured, with several livid streaks. Fomentations were ordered, and half a dram of the bark, with two ounces of the following were taken every four hours.

Take of the rob of oranges half an ounce,
Mountain wine a pint,
Refined sugar two ounces.
Mix them together.

All the scorbutic symptoms disappeared, and in ten days he returned to duty.

II. James Hutton, on the 20th of December, 1769, complained of great lassitude, and pains in his back and limbs; both his legs swelled considerably at night, and his gums were fœtid and spongy; his right leg was covered with several scorbutic blotches, and he had two ulcers on the fore part of his leg, which

which discharged thin bloody matter. Being costive, a purge was prescribed, and he was ordered to bathe his legs frequently with warm vinegar.

On the 26th. He began the bark and antiscorbutic mixture, as in the above case.

On the 10th of January, 1770. The ulcers were perfectly healed, and no scorbutic symptoms remained.

In a voyage from St Helena, in August, 1772, I had an opportunity of trying the comparative effects of two other different remedies, in eight scorbutic cases. The first was an ale, made of tartar, juniper-berries, and sugar, recommended by Dr. Sylvester*. The other was a fermented beer

* Take of Crude tartar three ounces,
Juniper-berries four ounces,
Orange-peel,
Ginger, each six drams,
Cloves two drams,
Coarse sugar two pounds,
Boiling water three gallons.
After standing four hours in a wooden vessel, the infusion was drawn off and bottled for use. I have been

beer from porter, which I made in the following manner:

Take of porter two quarts,
Ginger coarſely powdered two drams,
Sugar half a pound,
Water four quarts.

By this means, the beer ſoon runs into ſtrong fermentation, and generates much air; it was therefore made freſh every day; but, by adding a bottle of the old liquor to four quarts of freſh, its briſkneſs was much heightened.

I. George Elder, brought up to the ſea, and having had frequent attacks of the ſcurvy, on the 6th of Auguſt, 1772, complained of violent pain in his knees,

been ſince informed, that the proportion of the ingredients was pretty juſt; but, in the original preſcription, the doctor recommended the decoction of juniper-berries and cloves to be poured upon the ſugar and tartar, which, it ſeems, not only makes the ale more aromatic, but likewiſe accelerates the fermentation. In the manner I prepared it, it was three days before the leaſt inteſtine motion appeared, but in ſix days it was pretty briſk.

and

and great faintneſs on motion; his legs were conſiderably ſwelled; his right knee was greatly enlarged, very painful, black, and inflexible, and his legs and thighs covered with ſmall red ſpots; he had an indolent tumor upon his arm, and was troubled with great conſtipation.

Proper external applications were ordered; he took two purges, and, on the 10th of Auguſt, was allowed two bottles of fermented beer from porter.

For the following ten days the progreſs of his diſeaſe was checked, the ſcorbutic ſpots appeared of a better colour, neither was his knee ſo much ſwelled, nor ſo painful; and he found himſelf conſiderably ſtronger.

The weather becoming wet, cold, and uncomfortable, his diſeaſe began to encreaſe rapidly.

On the 23d. The tendons of his hams were much contracted; his knees were very painful and livid, and it was with the greateſt difficulty he was able to walk. The beer was continued, as

he

he was extremely fond of it; and he was allowed a pint of wine in the day. However, he became daily worse and weaker.

On the 1st of September, arriving in the Downs, he was supplied with fresh meat and vegetable soup; but all his former complaints remaining, he was sent on shore on the 4th. In a short time, he was strong and healthy, and had no remains of the disease, which he imputed to a land air, dry apartments, and good nourishment.

III. William Macready, after being very much reduced by a tedious fever, began to complain of scorbutic symptoms in the beginning of August. His gums were very putrid, and bled much; his legs, arms, and thighs were covered with red and livid spots; he had a troublesome tightness on his breast, and a hard prominent tumor on the right tibia. His belly was regular, but his pulse was small and frequent. Proper topicals were applied; he was put upon the use of the beer from porter, and took from three

three drams to half an ounce of the bark daily.

On the 1ſt of September, when we arrived in the Downs, he was much ſtronger, the tumor on the tibia was diſcuſſed; however, ſeveral ſcorbutic ſpots remained, when he left the ſhip, on the 6th of September.

For breakfaſt and ſupper, theſe two patients had a pint of the beer made into panado, with boiled rice, ſweetened with ſugar; and for dinner, freſh meat from the captain's table.

The other ſix ſcorbutics had an allowance of tea, wine, and ſugar, and what freſh meat could be ſpared for dinner. They took two quarts of the tartar ale in the day. However, they all became worſe; and had our paſſage been a fortnight longer, there was no reaſon to doubt, that ſeveral of them would have fallen ſacrifices to the diſeaſe.

The tartar ale is exceedingly pleaſant; it has alſo the advantage of being cheap; and the ingredients will keep free from decay during the longeſt voyage. If it was

was given early, it might, perhaps, be found a very proper drink to prevent the ſcurvy.

From the caſes related, it will readily appear, that, during a continuance of bad weather, while the patient is confined to the damp air of a ſhip, nothing will prevent the calamity from ſpreading. Lime-juice, ſugar, and wine may for a little check its violence; but when it is arrived to any degree of virulence, a dry air, dry clothes, and good nouriſhment, will be found of more importance than all the boaſted power of medicines.

The moſt effectual means to prevent the ſcurvy in long voyages, in my opinion, is to obviate the bad conſequences, of living continually upon ſalted proviſions. The under officers, who are ſubject to all the ſame viciſſitudes of weather, and perform the ſame duty with the ſeamen, from being ſupplied with tea and ſugar, and other neceſſaries, ſeldom ſuffer much from the ſcurvy. The common ſailors have it not in their power to provide

provide themselves with such necessaries; it is, therefore, certainly the duty of their employers to make some allowance of this kind; but the further consideration of this matter we shall reserve to the Appendix.

CHAP.

CHAP. VII.

Obſervations on the Rheumatiſm.

THIS diſeaſe is by no means frequent in hot climates, yet it ſometimes attacks the common ſeamen from getting wet, or ſleeping upon deck in the night dews; ſometimes alſo it is the conſequence of the remitting fever or the dyſentery. In the firſt caſe, it is generally acute, or accompanied with fever; and, in the laſt, it is always chronic.

In the acute rheumatiſm, if the ſymptoms of inflammation run high, bleeding is neceſſary. The patient ought to be confined to a cool regimen, and a free perſpiration ſhould be kept up by deluent liquors, and ſmall doſes of emetic tartar, as recommended in the remitting fever. If the pains become fixed to the joints, bliſters are of the greateſt uſe, and ſeldom fail to remove the complaint.

When the chronic rheumatiſm is the conſequence of long-continued fevers or obſtinate fluxes, I have been ſeldom diſappointed

appointed in curing the diseafe, by fweating the patient with fmall dofes of ipecacuanha and opium, in the form of Dover's powder, N°. 1*, which, however, ought not to be continued for any length of time, as it reduces the ftrength. This courfe fhould be omitted for two or three days, and then begun again, taking once or twice a week, efpecially when coftive, as much gum guaiac.† as will gently move the belly. When the pains have continued obftinately fixed, I have, in many inftances experienced the greateft advantage from the application of the

* No. 1. ℞ Sal nitr.
Tart. vitriol. aa gr. vi.
Pulv. ipecacuan. gr. iii.
Opii pur. gr. i. fs. m. f. pulv fubtil.
Capiat mane & vefpere.

† No. 2. ℞ Aq. cinnam. ten. ℥i. fs.
Gum guaiac. ℈ii.
Pulv. jalap. gr. v.
Syr. fimp. ʒii. m. f. hauft.
Mane fumendus.

lini-

linіnent, N°. 3*, or the warm plaster, N°. 4 †.

When, by this means, the pains are removed, the Peruvian bark, and the use of the cold bath have seldom failed to complete the cure, and to confirm the health of the patient.

Some cases of the chronic rheumatism have come under my care, where the pains have been confined to some particular part of the body, as the shoulder, the joints of the knees and arms, which have resisted every usual remedy. At last the disease has been totally and expeditiously removed by rubbing mercurial ointment upon the parts affected. The common mercurial pill was given at the

* No. 3. ℞ Ol. olivar. ℥i.
Camphor. ʒii.
Tinct. cantharid. ʒiii.
Sp. corn. cerv. ʒii. m.
F. linimentum.

† No. 4. ℞ Emp. commun. ℥i.
Epispast. ʒii. m.
Extende sup. alutam.

same

same time. As a salivation generally rendered the cure more incomplete, these medicines were laid aside before they produced this effect*.

From the great success which attended the practice, I was induced to believe that the rheumatism was joined with venereal pains; but I have found it as effectual in several instances where there was no reason to suspect any venereal taint. Out of several cases which occured, I shall only subjoin the two following.

CASE I.

Robert Lavender, in the beginning of May, 1771, complained of flying pains in his arms, back, and legs, which, at last became fixed to the joint of his right arm. No inflammation could be observed; but the severity of the pain prevented him from getting any rest. A variety of medicines,

* I was lately informed by Dr. Silvester, who first communicated to me this method of using mercury in obstinate rheumatic pains, that such a course had seldom failed to answer his expectations.

dicines were tried, and every external application, without procuring him any relief.

May 13th, lat. 30 deg. 31 min. S. His arm was considerably wasted, weak, and inflexible. The pain in the joint was almost constant, the fore finger was swelled and inflamed, and all his complaints were aggravated at night. A dram of strong mercurial ointment was ordered to be rubbed upon the parts affected night, and morning, and pills, with gum guaiac. were prescribed*.

On the 17th. The swelling of his finger was much abated, his arm was more flexible, but the pains were as severe as ever. The ointment was continued.

On the 22d. As the weather was very cold and damp, and as his mouth began

* No. 5. ℞ Gum guaiac. ʒii.
Sapon. Venet. ʒi.
Syr. simp. q. s. form. in pil. gr. v.
Capiat quatuor ter die superbib. cyath. inf. sassafr.

to

to be ſlightly affected, his medicines were laid aſide.

24th. The pain in his arm was very tolerable, and the ſwelling of his finger quite removed. The ointment was begun again.

On the 26th. He could uſe his arm with eaſe. His mouth being ſlightly affected, the ointment was only repeated at night.

On the 1ſt of June, he was free from every complaint; and after taking ſome gentle phyſic, he returned to duty.

In the beginning of the month, the weather was cold and damp, being in the high latitudes off the Cape of Good Hope.

On the 17th. He complained of univerſal pains over his body, violent head-ach, great thirſt, and other ſymptoms of fever, which were removed in a few days by ſmall doſes of emetic tartar; but as the pains continued in his loins, and he complained of a return of the rheumatiſm in his arm, on the 20th, he was ſent aſhore at St. Helena, for the benefit of the land air.

On the 29th. He returned to the ſhip in a much worſe condition than ever; he complained of great head-ach and lumbago; his right arm was numb and inflexible, and the pains in the joints were exceedingly violent; his ſkin was hot, and his pulſe frequent. He was blooded to eight ounces; fomentations were ordered, and the draught, N°. 6*, was preſcribed morning and evening, which ſweated him profuſely, and mitigated all his complaints, except the fixed pain in his arm.

On the 8th of July, a dram of mercurial ointment was rubbed on the part affected, morning and night, and the preſcription, N°. 7†, was ordered twice a day.

* No. 6. ℞ Aq. menth. ſ. ℥i.
Vin. antimon. ʒi.
Laud. liquid. gut. xxx.
Syr. ſimp. ʒii. m.

† No. 7. ℞ Calomel. p.
Sulphur. aur. ant. aa gr. ii.
Conſ. cynoſbat. ʒi. m.
F. bol. m. & v. ſumendus.

On

On the 12th. The pain of his arm abated; the pills occasioned a slight squeamishness, but had no other sensible effect.

On the 15th. His mouth was slightly affected; the mercury was therefore laid aside.

On the 17th. He was free from every complaint, except weakness; and after taking a purge or two, returned to duty.

CASE II.

John Ashley, caulker's mate, frequently subject to severe attacks of the chronic rheumatism, in the beginning of July, 1772, complained of flying pains all over his body, which encreased on the least motion. For these complaints, he took a variety of medicines; however, the pains became fixed to his joints, and returned with violence at night. Blisters were applied, and half an ounce of the bark was prescribed daily.

On the 26th of July. He complained of fixed pains in his right knee and both his shoulders. He was confined to his bed;

bed; the violence of the pain prevented him from getting any reſt, and he was conſiderably emaciated. The joint of his right arm was ſwelled, but was not inflamed. Upon the ſtricteſt enquiry, there was no reaſon to ſuſpect any venereal taint, neither had he ever taken the ſmalleſt quantity of mercury for any complaint. The mercurial ointment was directed to be rubbed upon the part affected, as in the above caſe; and three grains of quickſilver, extinguiſhed with honey, and made into three pills with crumb of bread, were ordered morning and evening.

31ſt. Through the day, he was free from pain, and was able to walk. At night, he complained of head-ach, and his breath was offenſive. The mercury was omitted.

From this time all his complaints vaniſhed; his mouth was ſore, and he had a ſlight ſalivation for ſix days; he recovered his ſtrength daily, and was ſoon reſtored to health.

CHAP.

CHAP. VIII.

Obſervations on the Venereal Diſeaſe.

THE venereal diſeaſe being an infection ſui generis, neither confined to any peculiar conſtitution, nor any particular ſituation, cannot be properly claſſed among the prevailing diſeaſes of the Eaſt Indies.

However, there are few diſeaſes to which Europeans are ſubject in hot climates, more productive of fatal conſequences than this complaint. This is not ſo much owing to the diſeaſe being more malignant than in temperate climates, but to the means made uſe of to remove it.

A warm climate relaxes the ſolids, diſſolves the blood, and prediſpoſes to putrefaction. Mercury given for the removal of any venereal ſymptom adds to the putrid colliquation of the juices. Hence, in unhealthy ſituations, ſuch people as have taken much mercury frequently fall into the dyſentery, or are ſeized with the fever,

fever, and have a much worſe chance to recover than others.

From the ſame cauſes, where heat is long continued, the conſtitution in general will bear a much leſs quantity of mercury than in temperate climates; nay, a very ſmall proportion of it, introduced in any form, will often run to the mouth, and be ſpeedily carried off by ſalivation. The conſequence is, the craſis of the blood is melted down, the conſtitution impaired, and rendered incapable of bearing a ſuffi- cient quantity of the ſpecific. Hence the venereal ſymptoms elude its force, and remain as obſtinate as ever.

This being a certain and uncontrovert- ible fact, it ſhould naturally lead us never to exhibit mercury, unleſs urgent neceſ- ſity demands its uſe; and when it becomes abſolutely neceſſary to remove venereal ſymptoms, it ought to be our particular ſtudy to obviate the ill effects it produces in the conſtitution.

In a virulent gonorrhœa, the principal part of the cure is to guard againſt in- flammation. The patients ought to pay

the greatest attention to cleanliness, and should live upon a cool regimen. The body ought to be kept open by mild laxatives, and the heat of the urine blunted by frequent injections of milk and water. The drinks should be infusions of linseed, decoctions of marsh mallows or gum Arabic, rendered agreeably acid by lime-juice.

In simple gonorrhœas, when such a course is begun in time, notwithstanding the many assertions to the contrary, I never saw mercury necessary to complete the cure. All mercurial purges are very improper; they keep up the irritation, endanger a gleet, and induce buboes and hernia humoralis.

The method of giving calomel over-night in small doses, and next day working it off with salts, has been known to be very effectual; but when exhibited in this way, its good effects depend upon the cathartic qualities of the preparation, and not upon its virtues as a mercurial; and, upon several comparative trials, I have found the cure as certain, and more expeditious,

peditious, when performed by mild laxatives.

The best purgatives in a recent gonorrhœa are solutions of cream of tartar, and Epsom, or Glauber's salts, in small doses, repeated every second day during the first fortnight. In this way, they keep the belly gently open, operate powerfully by urine, and greatly abate the inflammatory symptoms. When the patient has an aversion to these easy purgatives, the same intentions may be answered by castor oil, and small doses of nitre and jalap.

By this means, the inflammatory symptoms are removed; the running gradually decreases, becomes whiter and thicker, and generally in a month the cure is effected; whereas, if mercury was given at this time, the running is brought back, and, for the most part, returns to its former virulence.

Although I very much disapprove of the use of mercury in recent gonorrhæas, even after the inflammatory symptoms are removed; yet, I must confess, that several cases have come under my care, where the

the disease has resisted the antiphlogistic method, either owing to frequent infections or improper treatment. In such cases, I have seen the best effects from three grains of calomel given over-night, or from rubbing in a dram of strong mercurial ointment upon the thighs, having recourse to purgatives at proper intervals, to prevent the mouth from becoming affected.

But, in the early state of the disease, the cure has been often speedily and as effectually accomplished by throwing up the urethra, three or four times a day, a small quantity of some astringent injection*.

During the cure by injection, the patient should avoid exercise, and live upon a spare diet. If the injections occasion

* The following are those I have used with greatest success.

No. 1. Take of rose-water eight ounces,
Sugar of lead half a dram,
White vitriol five grains.

No. 2. Take of corrosive sublimate one grain.
Water eight ounces.

pain

pain or irritation in the passage, a little sweet oil may be injected; and if the heat of the urine and erections become violent, the use of them should be suspended till these symptoms are removed by the cooling treatment already mentioned.

When buboes proceed from a recent infection, I have always endeavoured to disperse them by antiphlogistic purges, a cooling regimen, and the application of mercurial ointment; neither do I ever remember to have seen a pox the consequence of this treatment.

From the success attending this practice, I have been induced to believe, that buboes are frequently symptomatic from irritation in the urethra; and that the matter contained in them, either does not in the least differ from that in any other abscess, or that the mercury made use of to discuss them, is sufficient to subdue the venereal virus.

The other symptoms which accompany or succeed a gonorrhœa, such as the hernia humoralis, phymosis, stranguary, and

gleets, I shall purposely pass over, these being generally occasioned by irregularities or improper treatment. When they appear in hot climates, I have found them yield to the common treatment.

When a gonorrhœa is accompanied with shankers, warts, or rasberry-like excrescencies on the penis, it cannot be cured without mercury; therefore, after removing the inflammation, by a cool regimen, immediate recourse is to be had to the specific.

These symptoms, though topical, will for the most part, require as much mercury to remove them effectually as in a confirmed lues, of which they are a symptom; therefore it ought to be used externally and internally at the same time.

When the use of mercury becomes necessary to remove any symptom of a confirmed lues, in hot climates, particularly in unhealthy situations, half an ounce of bark ought to be taken daily, during the mercurial course. By this means, the putrid dissolution of the blood is prevented, and the constitution of the patient enabled

enabled to bear a sufficient quantity of the specific to subdue the venereal taint. Before I prescribed the bark in this manner, I have had several venereal cases under my care, which have eluded the power of mercury.

For the cure of a confirmed pox, I have always trusted to the simple preparations of mercury, such as the common mercurial ointment, or crude quicksilver, extinguished in mucilage, honey, or rhubarb *.

As

* No. 3. The following is in imitation of Plenk.
Take of quicksilver a dram,
Gum Arabic reduced to mucilage two drams.
Let the quicksilver be rubbed with the mucilage till the globules of mercury entirely disappear; afterwards add gradually eight ounces of cinnamon-water and an ounce of syrup of sugar.

A spoonful or two may be taken night and morning.

No. 4. Take of quicksilver one dram,
Honey a sufficient quantity.
Let the quicksilver be rubbed with the honey till the mercurial globules entirely disappear; afterwards add a dram of crumb of bread, or as much as

 is

As there is no poſſibility of aſcertaining the quantity of mercury which different conſtitutions will bear, it is always prudent to begin with ſmall doſes, and to keep gradually encreaſing them. If, during the uſe of mercury, ſymptoms of ſalivation appear, it ſhould be immediately ſuſpended.

When one preparation of mercury does not ſucceed, I have ſeen great advantage from uſing others. Theſe which I have tried with the greateſt ſucceſs are Dr.

is ſufficient to form them into a maſs, to be divided into ſixty pills.

From three to ſix of theſe may be taken at night and morning.

But of all the different medicines which I have employed to extinguiſh mercury, rhubarb anſwers the intention moſt effectually.

No. 5. Take of quickſilver one dram,
Rhubarb a ſcruple.

Moiſten the quickſilver with any thin ſyrup, and grind them till the globules of mercury are perfectly incorporated; then add a ſufficient quantity of crumb of bread to reduce the whole to an uniform maſs, to be made into ſixty pills, which may be taken as above.

Plum-

Plummer's powder, or the precipitate from calomel recommended by Dr. Sanders. The saline preparations of mercury are never to be trusted to; the solution of sublimate is very precarious; and, in warm climates, as it ruins the stomach and dissolves the fluids, it ought to be carefully avoided.

During a mercurial course, the strength should not be allowed to sink; the patient ought therefore to be supported by a nourishing but cool diet; he should not use any strong exercise nor expose himself to the heat of the sun; he should be kept exceedingly cool; neither should flannel, or any covering, be put upon his head, as by this a salivation is induced.

If such gentle treatment was followed, and the bark taken along with the mercury, the disease may be almost always removed without any risk to the constitution.

APPENDIX.

APPENDIX,

CONTAINING

I. *Obſervations on the Sea Proviſions.*

II. *Regimen for the Sick.*

III. *Obſervations on the Medicine Cheſt.*

IV. *Directions to Europeans who go to Bengal.*

V. *Tranſlation of Preſcriptions in the preceding Work.*

APPENDIX.

SECT. I.

Obſervations on the Sea Proviſions, and Alterations propoſed.

THE moſt frequent and fatal diſeaſes to which ſeamen are ſubject, depend upon a moiſt atmoſphere and unwholeſome aliment. The firſt is the moſt powerful prediſpoſing cauſe of putrid diſeaſes; and when the laſt concurs, it never fails to produce them. If theſe diſeaſes could be prevented by proper diet, ſeamen would be the moſt healthy people in the world.

When the conſtitution is vigorous, ſtrict regulations, with reſpect to aliment, are often unneceſſary, and ſometimes hurtful; however, ſome degree of attention is eſſentially neceſſary to preſerve health. The

 diet

diet ought to be varied according to the ſtate of the body, the ſeaſons, and the climate. In cold countries, the moſt wholeſome and nouriſhing diet is a due mixture of vegetable and animal food. In ſultry climates, the aliment ought to conſiſt moſtly of vegetables. Nature and common ſenſe ſhew ſuch variations to be indiſpenſibly neceſſary. Salted proviſions might be very proper nouriſhment to the laborious who breathe a pure land air, and who are not totally debarred from vegetables; but in the circumſtances of the ſailor, expoſed to the influence of an unwholeſome atmoſphere, and to the damps and uncleanlineſs of a ſhip, no diet could have a greater tendency to produce diſeaſes.

The proviſions with which the Eaſt-India ſhips are ſupplied, are of the very beſt in their kind, and, with reſpect to the quantity allowed much exceed that in any other ſervice*.

In

* The daily allowance to each meſs, conſiſting of five men, is eight pounds of ſalted beef, or ſeven pounds

In hot climates, even when the body is in the moſt healthy ſtate, the humours have a tendency to become putrid, which can only be prevented by freſh nouriſhment. Full meals of animal food, upon which the Engliſh ſeamen are neceſſarily obliged to live, is the reaſon why they are ſo generally afflicted with the ſcurvy, and ſuffer ſo much from putrid diſeaſes.

As the health of ſeamen in voyages to the Eaſt Indies muſt greatly depend upon a ſhort allowance of ſalted proviſions, it is to be wiſhed that ſome alterations in victualling the ſhips were introduced.

If a ſufficient quantity of coarſe ſugar and tea were allowed for breakfaſt, inſtead

pounds of pork, and ſtock-fiſh twice a week ſo long as it laſts: the freſh articles are, three pounds and a half of flour for pudding, or two pints and a half of peas, calavances, or a ſufficient quantity of yams. With the ſtock-fiſh, they are uſually allowed potatoes.

The other articles are muſtard, oil, and vinegar; each man is allowed one-fifth of a pint of brandy or arrack, and they are ſeldom put to a ſhort allowance of biſcuit.

of animal food, the bad consequences of living constantly upon salted provisions would be obviated; and I apprehend, that such an alteration might take place in all the East-India ships, without incurring the least extraordinary expence to the employers.

Seven or eight pounds of salted beef or pork in the day is certainly too much for five men, and is more than they would use, had they other articles of sustenance. Now, allowing that one-fourth of the salted provisions were deducted, it would more than amply counterbalance the expence incurred by laying in tea and sugar.

Rice, in the homeward-bound passage is sometimes provided instead of biscuit. It is much to be wished, that this practice was more general, as the best bread becomes unsound, and generates weevils or maggots. Rice can be procured in India at a very cheap rate; the only objection which can be offered, is the extraordinary quantity of water necessary for boiling it.

One great cauſe why we have ſucceeded ſo ill in preventing marine diſeaſes, and particularly the ſcurvy, ſeems to be a ridiculous attention to novelty. We fondly adopt every new propoſal, and often neglect articles whoſe virtues have been confirmed by experience. Amongſt theſe, I ſhall only mention oranges and lemons, which, of all vegetables, keep beſt at ſea.

In voyages to the Eaſt-Indies, the moſt of the outward-bound ſhips refreſh at Madeira, the Cape, Johanna, or Madagaſcar. At any of theſe places, a ſufficient quantity of lemons or oranges can be eaſily procured; and their juice may be preſerved ſound during the longeſt voyages, by mixing with it a fourth-part of ſpirits. By this means, abundance of theſe ſalutary articles might be provided to mix with the liquor, both at ſea and in thoſe harbours in India where vegetables are too dear to become an article of the ſhip's allowance.

That ſuch a ſcheme may be properly conducted, a ſmall ſum ſhould be allowed, and an officer appointed to purchaſe theſe

 fruits;

fruits; for the greateſt reaſon of this being neglected is, that it is aſſigned to the province of none. This would be only following the prudent and humane practice of foreigners; the Danes, in particular, never fail to lay in abundance of theſe articles, and at ſea make it the duty of the fifth officer, to ſee that the juices are properly diſtributed in punch.

If ſuch a neceſſary part of diet were added to the ſhip's proviſions, we may certainly affirm, that the ſcurvy would never rage with fatality; the morbid diſpoſition of the fluids, occaſioned by the uſe of ſalted proviſions would be prevented; and ſeamen, after having performed long voyages, upon their arrival in unhealthy harbours, would not be ſo ſubject to the epidemic diſeaſes of the country.

The healthineſs of ſeamen in voyages from China is the ſtrongeſt proof of the advantages of ſuch an alteration; the ſcurvy or any putrid diſeaſe is ſeldom to be ſeen. This can be imputed to no other cauſe but to the tea and ſugar which every ſeaman lays in for his ſea-ſtores. In other

reſpects,

respects, the circumstances are the same and the voyage is as tedious *.

Every motive seems to enforce this proposal; a great many lives would be saved by it, and voyages, even when undertaken at improper seasons, would be rendered more certain. How many instances happen of ships being obliged to put back on account of the scurvy, contracted by being detained for a short time, in bad weather, off the Cape of Good Hope, when the disease would never have appeared, had a proper diet been observed from the beginning of the voyage.

The great advantages which would accrue to the company's recruits from such an alteration, are too obvious to be mentioned. These people are in a condition

* On the 30th of May, 1772, we spoke to the Lord North Indiaman off the Cape, and kept company with her for a few days. She sailed from Madrass a little after the Talbot left China, but intended putting into False Bay, as many of her people were afflicted with the scurvy. At that time, all our people were in perfect health, nor was there the most distant symptom of the disease amongst them.

much

much more to be pitied than the common ſailors, who, accuſtomed to the hardſhips of a ſea life, ſeldom fail to provide themſelves with a proper ſtock of clothes and ſome tea and ſugar; but the company's recruits having bartered their apparel for liquor, and ſetting out to ſea without a ſingle neceſſary, all they can poſſibly expect, from the time they leave England till they arrive in India, is the ſhip's proviſions. Being often crowded together, it generally happens, that, in the courſe of the voyage, many of them are ſeized with fevers, to which they would certainly fall victims, if not allowed wine and other neceſſaries from the humanity of the captain.

It is therefore much to be wiſhed, that, although the alterations in the ſea-proviſions ſhould never take place, that at leaſt a daily allowance of tea and ſugar were granted to the recruits, who are more immediately in the ſervice of the company, and who are yearly ſent out at ſo great an expence. All that is farther neceſſary for the preſervation of their health is cleanlineſs and exerciſe.

In every ſhip carrying out recruits, a proper military officer ſhould be ſent, whoſe particular province it ſhould be to prevent them from ſelling their clothes, to ſee that they keep themſelves clean, that their hammocks be aired from time to time, and that they uſe proper exerciſe, in doing the duty of the ſhip, or in learning military diſcipline.

SECT. II.

Regimen for the Sick.

AMONGST the many diſadvantages which attend the practice of medicine at ſea, the want of a proper regimen for the ſick may be juſtly eſteemed the greateſt.

A regulation of diet is neceſſary in all diſeaſes, and without it the moſt powerful medicines will be preſcribed to little advantage; yet, in the ſhips employed by the Eaſt-India company this important article has either been overlooked or totally diſregarded.

During the courſe of a fever or flux, ſomething more is neceſſary than the cordials

dials of the medicine-cheſt. In a low ſtate, what will the ſerpentaria, volatiles, and other medicines of this kind, avail? But when the patient is in a convaleſcent ſtate, reduced to the laſt extremity of weakneſs, and perhaps having a ſtrong craving for food; when the digeſtive powers are ſo much impaired, what nouriſhment will the common proviſions of the ſhip afford him? He has, however, nothing elſe, unleſs the humanity of the captain allow him wine and other articles of nouriſhment; but this being too great an expence for any individual, muſt always be very precarious.

If the humane and generous proviſion made for the ſick on board the Talbot was general in the ſervice, there would be no occaſion for any complaint of this kind, where the Commander generouſly ſupplied them with as much wine as was neceſſary, and with articles of proper nouriſhment from his own table.

In the courſe of laſt voyage, near thirty dozen of wine was neceſſarily expended; and I will venture to affirm, that many of the

the ſoldiers and ſeamen, who muſt otherwiſe have fallen ſacrifices to diſeaſe and weakneſs, owed their lives to this laudable humanity.

If an allowance of wine was ſettled in the ſervice, the other requiſite articles of nouriſhment may be reduced to a very ſmall number; rice, ſago, portable ſoup, and a few of the uſual dried fruits. If ſuch alterations as have been propoſed were made, with reſpect to diet and regimen for the ſick, the condition of the common ſailor and ſoldier, both when in health, and when afflicted with diſeaſes, would be rendered as comfortable as a ſea life will admit of, and the advantage accruing to the company would more than counterbalance the extraordinary expence.

SECT. III.

Obſervations on the Medicine-Cheſt.

FROM the account of the diſeaſes which occur at ſea, as well as in different places of the Eaſt Indies, it will appear how little occaſion there is for a great variety

variety of medicines, and how ridiculous the practice, to fit out the medicine-cheſt with all the empty ſhew of an apothecary's ſhop.

Amongſt all the liſts of medicines which I have peruſed, above an hundred and fifty articles are the loweſt number which have been carried out. In ſuch a numerous catalogue, there are many articles which are perfectly inſignificant, ſuch as the variety of plaſters, ointments, diſtilled waters, &c. Some of them ferment, and ſoon ſpoil, ſuch as electaries, confections, and ſyrups; therefore, allowing they were ever really uſeful, nothing can be expected from them.

Moſt of the tinctures are exceptionable, as they are very expenſive, and may be given in a more certain form.

Among the claſs of purgatives, many of them are too draſtic for the caſes which uſually occur. Of this kind are aloes, ſcammony, and pil. collocynth. Others do not keep ſound for any length of time, ſuch as the jalap. Therefore, if any at all, a very inconſiderable quantity of theſe ſhould

ſhould be carried out, which would make an ample allowance for the more lenient and uſeful purges, ſuch as the neutral purging ſalts, cremor tartari, oleum ricini, ſenna, and rhubarb.

To mention every article in the medicine-cheſt would be tedious; and to criticiſe on particular formulas, ſupported by the authority of eminent phyſicians, whoſe obſervations I truly revere, would be diſagreeable. Nothing has been farther from my intention than to find fault, and any ſtrictures already made upon medicines can be meant to extend no farther than to their uſe in the diſeaſes of hot climates.

The great diſadvantage of having a numerous catalogue of medicines, where only a certain fixed ſum is allowed for purchaſing them, muſt be ſufficiently obvious. A great part of that ſum is expended on medicines which are entirely uſeleſs, or ſuch as will never bep reſcribed with any intention to remove diſeaſes. The conſequence of this is, that there is a very ſcanty allowance of the uſeful reme-

dies

dies ſo much wanted. In caſe of ſickneſs, they are quickly expended after leaving England, and cannot be procured again but at the moſt exorbitant price, and ſeldom at any rate, unleſs carried out as a part of private trade.

The following is an exact liſt of the quantity of thoſe medicines which are judged indiſpenſibly neceſſary, and were barely ſufficient in a China voyage.

The bark and ſalts will be found greatly to exceed any quantity ever ſent out; however, a greater allowance of the bark is indiſpenſably neceſſary for the uſe of thoſe ſhips which muſt remain at Bengal during the ſickly ſeaſon. If a ſurgeon is abundantly ſupplied with the following medicines, and a proper regimen allowed for the ſick, we may venture to affirm, that he will find it no difficult matter to remove all the dangerous diſeaſes to which Europeans are ſubject in voyages to the Eaſt Indies.

Peruvian bark - - - - -	40 pounds,
Caſcarilla - - - - - -	3 pounds,
Ipecacuanha - - - - -	3 pounds,

Emetic

Emetic tartar - - - -	4 ounces,
Glaſs of antimony (for antimonial wine) - - - -	1 ounce,
Opium - - - - - -	8 ounces,
Laudanum - - - - -	2 pounds,
Glauber ſalts - - - -	28 pounds,
Epſom ſalts - - - -	28 pounds,
Soluble tartar - - - -	2 pounds,
Quickſilver - - - - -	2 pounds,
Calomel - - - - - -	1 pound,
Salt of tartar - - - - -	2 pounds,
Salt of hartſhorn - - -	8 ounces,
Cream or crude tartar	
Strong ſpirit of vitriol - -	2 pounds,
Gum Arabic - - - -	8 pounds,
Bliſtering plaſter - - -	3 pounds.

It is not meant that the above ſhould exhibit all the variety of the medicine-cheſt; other remedies are required for chirurgical caſes, and for thoſe diſeaſes which may occur ſporadically; however, a very trifling quantity of other medicines will anſwer the purpoſe.

SECT. IV.

Directions to Europeans who go to Bengal.

FROM the obſervations made in the former part of this work, it will appear, that, even in the moſt unhealthy ſettlements in the Eaſt Indies, ſickneſs is only periodical a few months in the year, and that the remaining part is healthful, or at leaſt never productive of general ſickneſs. This ſhould naturally lead ſuch Europeans as intend to ſettle in that part of the world to arrive at their deſtined reſidence during the healthy ſeaſon; for, as a humane and excellent writer juſtly obſerves †, "the conſtitution of Europeans, by length of time, becomes ſeaſoned to the Eaſt and Weſt Indian climates, if it is not injured by the repeated attacks of ſickneſs upon their firſt arrival. Europeans, therefore, when thus habituated, are generally ſubject to as few diſeaſes as thoſe who reſide at home; inſomuch that many perſons,

† Dr. Lind, on the Diſeaſes incidental to Europeans in Hot Climates, p. 146.

dreading

dreading what they may again be expofed to fuffer from a change of climate, chufe rather to fpend the remainder of their lives abroad than to return to their native country."

Of all our fettlements, Bengal proves moft deftructive to Europeans; recruits are annually fent out there, and a greater number of adventurers vifit that territory than all the reft of our dominions in the Eaft Indies.

The commercial intereft of the company and the fuccefs of the voyage make it neceffary that the fhips fet out from England early in the feafon; by which means they arrive at Bengal immediately before or during the rainy months, and the paffengers and recruits are expofed to repeated attacks of ficknefs upon their firft arrival.

The queftion which naturally occurs here is, How is this to be obviated? In my opinion, it may be effected in the following manner; and, if it is judged practicable, it would feem to merit fome degree

 of

of attention, as it will prove the certain means of preſerving every year a number of lives.

As the coaſt of Coromandel is at no conſiderable diſtance from Bengal; ſuch Europeans as intend ſettling at the laſt place ought to paſs the months of July, Auguſt, and September on that healthy coaſt. The ſoldiers who are ſent out to recruit the regiments at Bengal may alſo paſs ſome time there; or, perhaps, it would ſtill be better to ſupply Bengal with the Madraſs regiments, who have been ſeaſoned at leaſt for a twelvemonth. They might be tranſported during the healthieſt ſeaſon; and the number of lives which would be ſaved by this means would more than counterbalance the expences of the additional embarkation.

Through want of attention to this ſimple and effectual means of preſerving the conſtitution of Europeans upon their firſt arrival, incredible numbers are yearly carried off at Bengal. Here I cannot help lamenting the untimely fate of many of my acquaintances, who were ſent out in the Talbot,

Talbot, in the year 1768*. Out of ſeventeen Cadets and other adventurers, only eight ſurvived the ſickly months; and we cannot ſuppoſe that the mortality would be leſs among the ſoldiers, who accompanied them.

The moſt effectual method to preſerve the lives of the ſeamen, who muſt neceſſarily be ſtationed every year at Bengal, during the ſickly ſeaſon, is to anchor the ſhips at the moſt healthy ſtations in the river, and to allow them a ſufficient quantity of wine when brought low by diſeaſes.

Of all the ſtations in the river, Culpee is the moſt unhealthy; therefore, if conſiſtent with the intereſt of the company, the ſhips ſhould lie at Cogeree, which is at no great diſtance.

I ſhall conclude the whole with a quotation from Dr. Lind, one of the greateſt

* Two Majors, three Captains, and ſix Lieutenants, who came out in the Talbot and remained at Calcutta, by uſing proper precautions, eſcaped the ſickneſs of the ſeaſon.

medical improvers in the prefent age, "The recent examples of the great mortality in hot climates ought to draw the attention of all the commercial nations in Europe towards the important object of preferving the health of their countrymen, whofe bufinefs carries them beyond feas. It is found, that fickly and unhealthy fituations require a conftant fupply of people, and of courfe drain their mother-country of an incredible number of its inhabitants, and fome of thefe too its moft ufeful individuals."

SECT. V.

AS moft of the difeafes in the Eaft Indies very fuddenly prove fatal, and as many Europeans have it not in their power to call in medical advice, for the benefit of thofe, the principal prefcriptions in the preceding work are tranflated, and fuch farther directions added as will render the adminiftration of the medicines fafe.

Pre-

Prescriptions for the Fever.

N°. 1. Take of emetic tartar a grain,
Magnesia eleven grains.
Mix them together, and divide them into four papers; one or two may be taken every hour.

N°. 2. Take of manna an ounce,
Emetic tartar from two to four grains.
Dissolve them in eight ounces of water.
Two table-spoonfuls may be taken every hour.

N°. 3. Take of Epsom salts from six drams to an ounce and half,
Emetic tartar two grains.
Dissolve them in seven ounces of water.
Four table-spoonfuls may be taken every hour.

Emetic tartar taken in the above forms seldom fails to cleanse both the stomach and bowels thoroughly, and, by producing an equable perspiration, either brings on a

 remission

remiſſion of the fever, or is all that is neceſſary to prepare the patient for the uſe of the bark. It is alſo proper to remark, that the doſe of this antimonial ſhould always be adapted to the ſtate of the ſtomach. When the vomiting of bile is ſevere, a ſmall quantity will anſwer the purpoſe. The ſafeſt, and, perhaps, moſt effectual method of exhibiting this medicine, is to begin with ſmall doſes, and to repeat them hourly till they operate.

When the preſcriptions, N°. 1 or 2, failed to procure a ſtool, and if the pain at ſtomach, or bitter taſte in the mouth remained, the purge, N°. 4, was given next day. When a violent paroxyſm of the fever was dreaded, the preſcription, N°. 5 or 6, was ordered, both with an intention to clean the firſt paſſages, and to mitigate the ſucceeding feveriſh fit.

N°. 4. Take of Epſom ſalts from ſix drams to an ounce and a half,
Decoction of tamarinds eight ounces.

Mix

Mix them together and then ſtrain them.
This may be taken in the morning, at two ſeparate draughts.

N°. 5. Take of Peruvian bark half an ounce,
Water twelve ounces.
Boil to ſix ounces.
After ſtraining, add ſix drams of Epſom ſalts, and half an ounce of tincture of bark or brandy.
Four table-ſpoonfuls may be taken every hour, till two or three ſtools are procured.

N°. 6. Take of Peruvian bark ſix drams,
Soluble tartar two drams,
Syrup of ſugar a ſufficient quantity to make them into an electary.
The ſize of a nutmeg may be taken every two hours in a little wine and water.

After theſe neceſſary evacuations are performed, recourſe muſt be had to the bark, in as large doſes as the ſtomach will

will bear, without paying any regard to the remiſſions or exacerbations of fever. If the vomiting continues, or when the ſtomach is ſqueamiſh, a grain of ſolid opium may be given previous to its uſe. The moſt effectual method of preſcribing the bark is in powder, from half a dram to two drams, every two hours, either mixed in port, claret, or the ſaline * draughts; but when the ſtomach is too weak to bear it in ſubſtance, it may be given in decoction, as in the following form.

N°. 7. Take of Peruvian bark in powder two ounces,
Water two pints.
Boil till one pint of the liquor is waſted, adding, about the end of the boiling, three drams of gum Arabic. After paſſing the liquor through a coarſe ſtrainer,

* Take of ſalt of tartar a ſcruple,
Juice of lemons,
Weak cinnamon water, each half an ounce,
Refined ſugar a dram.
Mix them together.

add

add two ounces of tincture of bark.

Two or three table-ſpoonfuls may be taken every hour.

If the fever is accompanied with a purging, five drops of laudanum ought to be added to each doſe of the bark, till that evacuation ceaſes; or, if the patient is coſtive, a few grains of rhubarb or ſoluble tartar, as in the preſcription, N°. 6, may be added.

But nothing is more neceſſary than to perſiſt in the uſe of this remedy; for, although at firſt it may ſeem to encreaſe all the ſymptoms, yet when a proper quantity is uſed, the fever will either be ſoon removed, or its dangerous tendency prevented.

N°. 8. Take of water ſix ounces,
Salt of hartſhorn two ſcruples,
Brandy an ounce,
Syrup of ſugar half an ounce.

Mix them together.

 A ſpoon-

A ſpoonful may be given occaſionally, when the patient is low, feeble, and faint.

Page 154. Take of ipecacuanha ten grains,
Emetic tartar two gr.
Mix them together.

Page 165. Take of bark decoction two ounces,
Weak ſpirit of vitriol ten drops.
Make them into a draught, to be repeated every three hours.

Page 179. Take of camomile flowers half an ounce,
Salt of tartar one dram,
Boiling water eight ounces.
Let them ſtand together for two hours; then ſtrain for uſe.

Page 208. Take of cinnamon water an ounce,
Muſk fifteen grains,
Refined ſugar two drams.

Grind

Grind the ſugar and muſk together, and add gradually the cinnamon water.

Page 216. Take of mint water an ounce,
Antimonial wine thirty drops,
Liquid laudanum twenty drops.

Mix them for a draught to be taken at bed-time.

Preſcriptions for the Dyſentery.

N°. 1. Take of ipecacuanha in fine powder ten grains,
Emetic tartar two grains.
Mix them well together, and divide them into two powders.

One of them may be taken for a doſe, and the other repeated in an hour, if the firſt does not operate ſufficiently.

But when the caſe is accompanied with fever, the following preſcription will be found to anſwer the purpoſe better.

N°. 2. Take of a decoction of tamarinds eight ounces,

Emetic

Emetic tartar from two
to four grains.

Diſſolve the emetic tartar in the decoction; two ſpoonfuls may be taken every hour, till two or three ſtools are procured.

N°. 3. Take of Epſom ſalts from ſix
drams to an ounce
and a half.

Diſſolve them in ſix ounces of boiling water, and add a ſufficient quantity of cream of tartar or lime-juice to render them agreeably ſour; ſome brandy may be alſo added occaſionally. This may be taken at two ſeparate draughts in the morning.

N°. 4. Take of caſtor oil from half an
ounce to ten drams,
Pepper-mint water or lime-
juice half an ounce.

Make them into a draught to be taken in the morning.

N°. 5. Take of ipecacuanha from eight
to twelve grains,

Emetic

Emetic tartar from one to two grains,
Balſamic ſyrup a ſufficient quantity to make them into four pills.

One may be taken every three or four hours.

N°. 6. Take of pure opium a dram,
Caſtile ſoap three drams,
Syrup of ſugar a ſufficient quantity to form them into a maſs for pills.

From four to ſix grains of the above pill may be taken every night at bed-time, adding occaſionally two or three grains of ipecacuanha.

N°. 7. Take of bark in powder an ounce,
Caſcarilla in powder half an ounce,
Cinnamon a dram,
Gum Arabic three drams,
Water one pound.

Boil to nine ounces, adding toward the end the cinnamon and gum Arabic. After ſtraining, add two ounces of tinc-

ture of bark or red wine. Four table-ſpoonfuls may be taken every two hours, with five or more drops of laudanum, to prevent it from running off by ſtool.

N°. 8. Take of Peruvian bark in powder ſix drams,
Caſcarilla in powder three drams,
Syrup of ſugar a ſufficient quantity to reduce them to the form of an electary.

The ſize of a nutmeg may be taken every three hours, waſhing it over with a glaſs of red wine.

N°. 9. Take of powdered ſtarch ſix drams,
Cinnamon one dram,
Gum Arabic half an ounce
Water three pints.

Boil to two pints, adding towards the end the cinnamon and gum Arabic. After ſtraining and ſweetening it with ſugar, a ſufficient quantity of the acid

Elixir of vitriol may be added to render it agreeably acid. This may be uſed for ordinary drink when the irritation in the bowels is violent.

N°. 10. Take of ſhavings of logwood three ounces,
Cinnamon two drams,
Water four pints.

Boil to two pints, adding the cinnamon towards the end; then ſtrain the decoction for uſe. A cupful may be taken three or four times a day.

Preſcriptions for the Bilious Colic.

Page 243. Take of a decoction of tamarinds eight ounces,
Emetic tartar a grain and a half,
Epſom ſalts an ounce.

Diſſolve the emetic tartar and ſalts in the decoction.

Page 244. Take of muſk fifteen grains,
Opium a grain,
White ſugar fifteen grains.

 Grind

Grind the muſk and ſugar together, then add the opium, and reduce them into a bolus with a ſufficient quantity of cordial confection.

Page 244. Take of weak cinnamon water
Spirit of Mindererus, of each three ounces,
Saline aromatic ſpirit two drams,
Syrup of ſugar an ounce.

Make them into a julep.

Page 246. The ſame as N°. 4, for the fever.

Preſcriptions for the Diſeaſe of the Liver.

N°. 1. Take of manna an ounce,
Soluble tartar half an ounce.
Diſſolve them in ſix ounces of water.

This may be taken in the morning at two ſeparate draughts.

N°. 2. Take of camomile flowers half an ounce,
Salt

Salt of tartar two drams,
Boiling water eight ounces.

Let them ſtand together for four hours. After ſtraining, a wine-glaſs may be taken every two hours.

N°. 3. Take of calomel two grains,
Soap pill ten grains.

Make them into two pills to be taken at bed-time.

N°. 4. Take of Caſtile ſoap two ſcruples,
Rhubarb ten grains,
Syrup of ſugar a ſufficient quantity to form them into a maſs, to be divided into twelve pills.

Four may be taken thrice a day, drinking after them a cupful of the infuſion, N°. 2.

Preſcriptions for the Rheumatiſm.

N°. 1. Take of nitre,
Vitriolated tartar, each ſix grains,
Ipecacuanha three grains,

Opium a grain and a half.

Reduce them to a fine powder, to be repeated morning and night.

Nº. 2. Take of ſimple cinnamon water an ounce and half,

Gum guaiac. two ſcruples

Jalap five grains,

Syrup of ſugar two drams.

Make them into a draught, to be taken once or twice a week, eſpecially when coſtive.

Nº. 3. Take of camphor two drams,

Diſſolve it in an ounce of olive oil, then add

Tincture of Spaniſh flies three drams,

Spirit of hartſhorn two drams.

Make them into a liniment. A little may be rubbed upon the part affected twice a day.

Nº. 5. Take of gum guaiac. two drams,

Caſtile ſoap one dram,

Syrup of ſugar as much as is ſufficient to reduce them

them into a maſs to be
divided into thirty-ſix
pills.

Four may be taken three times a day, drinking after them a cupful of ſaſſafras tea.

N°. 6. Take of mint water an ounce,
Antimonial wine ſixty drops,
Laudanum thirty drops,
Syrup of ſugar two drams.

Make them into a draught to be taken morning and evening.

N°. 7. Take of prepared calomel,
Golden ſulphur of antimony, each two grains,
Conſerve of hips enough to make them into a bolus.

To be taken evening and morning.

Preſcription for the Antiſcorbutic Drink, Page 303.

I find I have been miſtaken both in regard to the proportion of the ingredients, and the exact manner of preparing the

the Tartar drink. The following is Doctor Silvester's prescription.

"Take of crude white tartar powdered three ounces,
Juniper berries bruised four ounces,
Ginger in powder two drams,
Cloves in powder one dram,
Coarse sugar five pounds,
Water six gallons. - -

"Boil them half an hour; then pour the whole into a tub, and when nearly cold into a six gallon cask. If this liquor does not ferment within two or three days time, add half a pint of porter."

"It may be given a few hours after the fermentation is begun, from one to three pints daily."

THE END.

E R R A T A.

Page	line	
39	3	for *is* read *are.*
48	23	for *ſtation* read *ſtations.*
50	6	dele *there are.*
60	5	for *is* read *are.*
63	ult.	for *of* read *with.*
66	22	for *degrees* read *degree.*
70	1	of the note, for *is* read *are.*
74	7	for *are* read *is.*
124	21	for *apthæ* read *aphthæ.*
128	18	for *vebices* read *vibices.*
130	19	for *fever* read *fevers.*
133	2	for *iſſue* read *iſſues.*
139	15	for *renders* read *render.*
145	ult.	for *antiſceptic* read *antiſeptic.*
146	24	after *this* add *laſt.*
148	5	for *antiſceptic* read *antiſeptic.*
153	13	after *in* add *an.*
161	9	after *he* add *was.*
167	19	for *was* read *were.*
168	6	after *ſelected* add *from.*
179	3	for *bullent* read *bullient.*
180	16	for *were* read *was.*
183	1	for *miliiary* read *miliary.*
206	20	for *was* read *were,* and l. 23, for *were* read *was.*
214	15	dele *was.*
217	7	Sect. V. for *was* read *were.*
230	20	for *any* read *an.*
231	2	dele *ſoon.*
237	12	for *No.* 4, read *No.* 2.
242	12	after *viſit* add *him.*
243	7	for *behorie* read *ſemihora.*
244	20	for *acernat.* read *aromat.*
266	24	for *compliment* read *complement.*
283	11	after *which* add *was,* and dele *was* in the next line.
302	10	dele *were taken.*
334	9	and 10, for *is* read *are,* and line 13, for *were* read *was.*
336	10	for *a neceſſary part of diet* read *neceſſary articles.*
338	21	for *were* read *was.*